

PEACEFUL VALLEY COUNTRY CLUB

WHATCOM COUNTY

WASHINGTON

PAVEMENT ASSESSMENT REPORT

G&O #20543
APRIL 2021



Gray & Osborne, Inc.
CONSULTING ENGINEERS

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EXHIBIT

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- Appendix A – Maps
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INTRODUCTION

The Peaceful Valley Country Club retained Gray & Osborne, Inc. (G&O) to conduct an overall assessment of the 3.7 miles of roadways within the Club's street system. The Club's street system is shown on the following Street System Map (Exhibit 1) and consists of the following streets:

Major Roads	Minor Roads	
Peaceful Valley Drive	Flair Valley Drive	Hopeful Valley Lane
Balfour Valley Drive	Blue Jay Valley Lane	Ruby Valley Court
Sprague Valley Drive	Blackbird Valley Lane	Happy Valley Court
Clear Valley Drive	Fall Valley Lane	Red Valley Court
King Valley Drive	Boulder Valley Lane	Spur Valley Court
Deep Valley Drive	Frontier Valley Lane	Green Valley Court
	Green Valley Drive	Flair Valley Court

Based on available information, the Club's street system was constructed in the 1970s and consists of a single layer of hot mix asphalt over a layer of crushed gravel. The underlying soils in this area consist of Winston Silt Loam, overlaying glacial outwash which are permeable and provides a very stable base for the streets. All the streets appear to have been constructed with a crown, directing water runoff to existing roadside ditches or gravel shoulders. Due to the permeability of the underlying soils, most water runoff infiltrates into the ground.

Traffic within the Club appears to be mostly residential. However, transit, garbage, mail and other service vehicles and trucks use the street system to provide service to the area. Also, at the time of our survey, construction vehicles (dump trucks) were seen accessing the new construction off of King Valley Drive. The construction traffic was accessing the site via Peaceful Valley Drive and Deep Valley Drive.

The following pavement assessment identifies the specific pavement distresses that were identified in the field, their underlying causes and repair strategies. A brief summary of each street segment is also provided.

PAVEMENT ASSESSMENT

Based on the field work completed in July 2020, the most significant pavement distresses noted were isolated settlement and alligator cracking. These distresses extend throughout the Club to a varying degree.

ISOLATED SETTLEMENT

Cause

Isolated settlement is a subbase related distress and is defined as a localized depression in the roadway surface 1/4-inch deep or more over a 10-foot segment. Settlement can be attributed to a loss of material through consolidation of subbase material and/or a break in a utility pipe beneath the street.

Repair Strategy

The most effective way to address settlement is to remove and replace the affected area. This process includes sawcutting or grinding, to remove the existing pavement, compacting the underlying material to ensure a firm and unyielding condition, and installing and compacting a new asphalt patch.

ALLIGATOR CRACKING

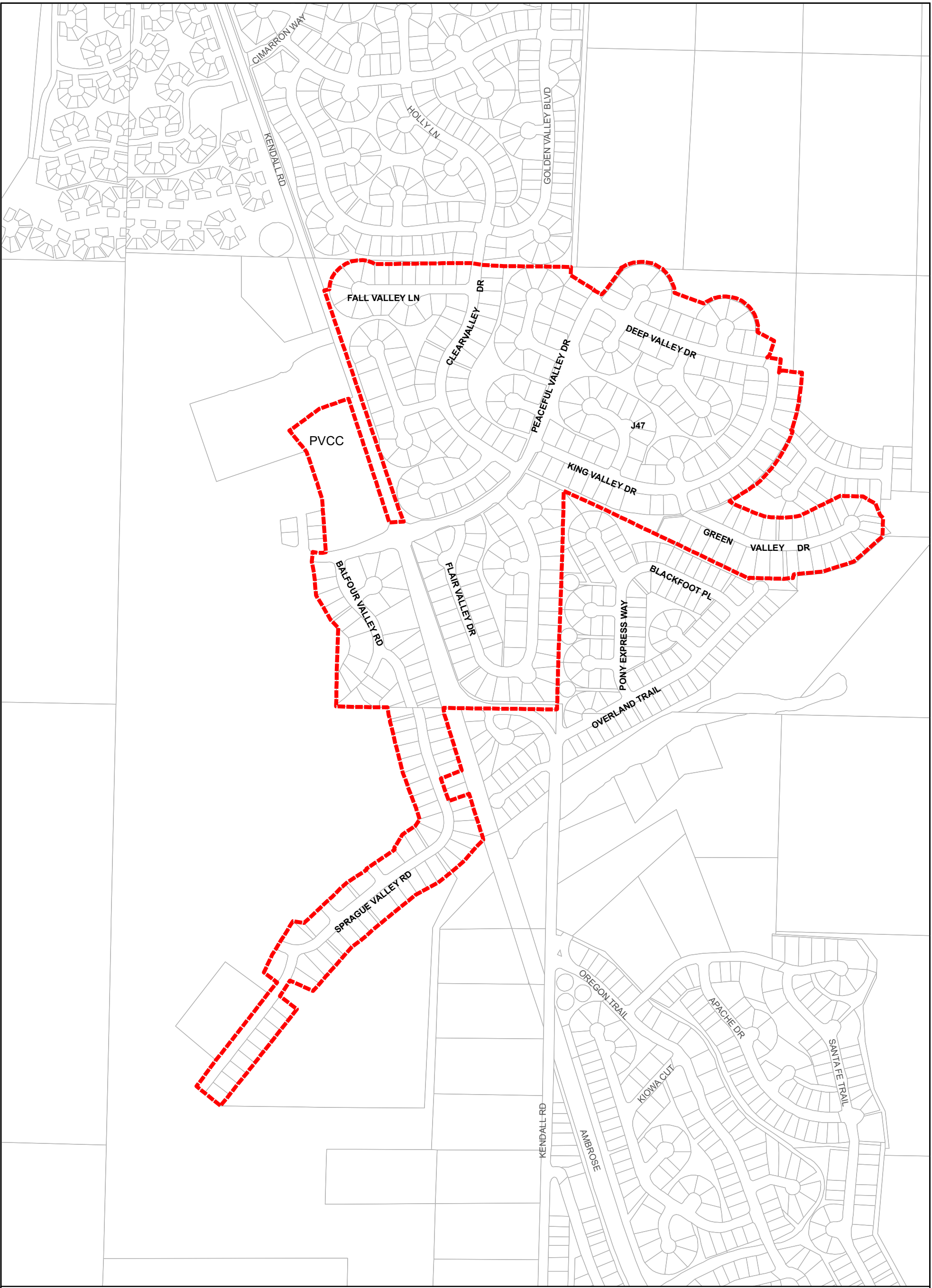
Cause

Alligator cracking, which has the appearance reminiscent of a reptile's scaly skin, can be attributed to either a subbase and/or surface related issue. This issue can be linked to many factors including the age of the asphalt, improper initial construction, or lack of compaction in the underlying gravel material. Once the surface begins to crack, if left untreated, water will seep beneath the asphalt and destabilize the subgrade. Lacking the support needed, cracks become more extensive, more water reaches the subgrade, and the extent of the distress increases in size.



Repair Strategy

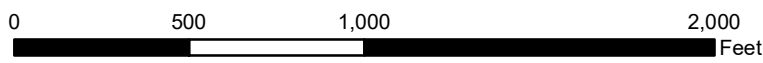
The most effective way to address alligator cracking is to remove and replace the affected areas. For smaller areas, the repair strategy would be to remove and replace the affected areas, similar to the isolated settlement repair strategy. For larger areas (defined as 40 percent or more of the street area), the repair can be accomplished through a process called Full Depth Reclamation (FDR). The FDR process consists of pulverizing the existing asphalt into small pieces (typically no larger than 2 inches), grading and compacting the pulverized material in-place. If necessary, the pulverized asphalt could be supplemented with crushed gravel in preparation for paving.

The street can then receive either a 2-inch layer of hot mix asphalt (overlay) or a bituminous surface treatment (chip seal).



LEGEND:

-  Peaceful Valley Country Club Boundary
-  Parcels



**PEACEFUL VALLEY
COUNTRY CLUB**

**PAVEMENT ASSESSMENT
EXHIBIT 1
STREET SYSTEM MAP**



Based on the overall assessment each street has been assigned a designation based on the following criteria:

Excellent: The street segment has no signs of pavement distress. Provided traffic volumes do not change, this street should be expected to last an additional 15 years before significant street maintenance should occur.

Good: The street segment is starting to experience light alligator cracking but no signs of pavement settlement. Provided traffic volumes do not change, this street should be expected to last an additional 8 to 10 years before significant street maintenance should occur.

Fair: The street segment has experienced moderate to heavy alligator cracking and isolated areas of pavement settlement. Provided traffic volumes do not change, this street should be expected to last an additional 5 years before significant street maintenance should occur.

Poor: The street segment has experienced heavy alligator cracking and has numerous areas of pavement settlement. It should be expected that street maintenance should occur within the next 2 to 3 years.

It should be noted that severe winter weather (snow, ice, freeze, thaw) or increases in traffic volumes, particularly trucks, could accelerate the pavement deterioration, requiring repairs sooner than identified herein.

SUMMARY OF EACH STREET SEGMENT

Below is a brief summary of each street segment based on the site visit. On all streets, drainage is addressed through a series of grass lined ditches and culverts. This drainage system appears to have capacity to handle all street runoff.

Major Roads

This report recommends that all major roads be repaired and overlaid in three phases. Phasing timing and costs are provided in the Conclusion.

Peaceful Valley Drive: Peaceful Valley Drive serves as the primary access from the State highway into the Club into both the western and the eastern side of the Club. As such, this street sees the highest volume of traffic and the pavement is showing significant wear and tear as the result. Peaceful Valley Drive is approximately 2,300 feet long and has two 11-foot travel lanes. There are existing gravel/grass shoulders and driveways on both sides of the street, with the exception of the segment between Sumas-Kendall Road and Balfour Valley Drive where there is a curb and sidewalk on the north side of the street. The pavement on Peaceful Valley Drive is considered to be in poor to fair condition based on the large areas of alligator cracking and some isolated settlement.

It is recommended that Peaceful Valley Drive be reconstructed through the FDR process and overlaid with a 2-inch layer of hot mix asphalt as part of Phase 1.



Peaceful Valley Drive: Poor Patch

Balfour Valley Drive: Balfour Valley Drive provides access to the western side of the Club and the District's Wastewater Treatment Plant. This street is approximately 1,380 feet long and has two 11-foot travel lanes. There are existing gravel/grass shoulders and driveways on both sides of the street. Balfour Valley Drive appears to have been overlaid recently and is in good condition. No work is currently recommended on Balfour Valley Drive; however, we do advise that the overall condition of the street be inspected every other year. Areas of distress should be repaired as needed.

Sprague Valley Drive: Sprague Valley Drive also provides access to the western side of the Club and the District's Wastewater Treatment Plant. This street is approximately 3,280 feet long and has two 11-foot travel lanes. There are existing gravel/grass shoulders and driveways on both sides of the street. The pavement on Sprague Valley Drive has experienced heavy alligator cracking and isolated areas of pavement settlement and is considered to be in poor to fair condition.

It is recommended that Sprague Valley Drive be reconstructed through the FDR process and overlaid with a 2-inch layer of hot mix asphalt as part of Phase 2.



Sprague Valley Drive: Alligator Cracking

Clear Valley Drive: Clear Valley Drive provides access to residential properties in the northern part of the Club and other residential streets on the east side of the highway. This street is approximately 1,460 feet long and has two 11-foot travel lanes. There are existing gravel/grass shoulders and driveways on both sides of the street. The pavement on Clear Valley Drive is starting to experience light alligator cracking and settlement in some areas. The overall pavement condition is fair to good.

It is recommended that the isolated areas of alligator cracking and settlement be fixed as part of Phase 2. A 2-inch asphalt overlay is recommended to be installed as part of Phase 3.

King Valley Drive: King Valley Drive provides access to residential properties in the eastern part of the Club and other residential streets on the east side of the highway. This street is approximately 1,880 feet long and has two 11-foot travel lanes. There are existing gravel/grass shoulders and driveways on both sides of the street. The pavement on King Valley Drive is starting to experience heavy alligator cracking in some areas and isolated areas of settlement. There are also some pavement patches which have started to settle and crack. The overall pavement condition is fair.

It is recommended that the isolated areas of alligator cracking and settlement be fixed as part of Phase 1. A 2-inch asphalt overlay is recommended to be installed as part of Phase 3.

Deep Valley Drive: Deep Valley Drive provides access to residential properties in the northeastern part of the Club and other residential streets. This street is approximately 1,080 feet long and has two 11-foot travel lanes. There are existing gravel/grass

shoulders and driveways on both sides of the street. The pavement on Deep Valley Drive is starting to experience heavy alligator cracking in areas and isolated areas of settlement. The overall pavement condition is poor to fair.

It is recommended that the isolated areas of alligator cracking and settlement be fixed as part of Phase 1. A 2-inch asphalt overlay is recommended to be installed as part of Phase 3.

Minor Roads

Flair Valley Drive: Flair Valley Drive is a looped road off Peaceful Valley Drive and provides access to residential properties in the central part of the Club. This street is approximately 2,280 feet long and has two 11-foot travel lanes. There are existing gravel/grass shoulders and driveways on both sides of the street. The pavement on Flair Valley Drive is starting to experience light alligator cracking and isolated areas of settlement. The overall pavement condition is fair.

Based on available funding and need, isolated areas of settlement and alligator cracking should be repaired on Flair Valley Drive for \$29,000. Flair Valley Drive can then either be overlaid or chip sealed for an additional \$111,000 or \$56,000, respectfully.

Flair Valley Court: Flair Valley Court provides access to residential properties off Flair Valley Drive and terminates at a cul-de-sac. This street is approximately 140 feet long and has two 11-foot travel lanes. There are existing gravel/grass shoulders and driveways on both sides of the street. The pavement on Flair Valley Court has some isolated areas of settlement. The overall pavement condition is good.

Based on available funding and need, the isolated areas of settlement and alligator cracking should be repaired on Flair Valley Court for \$4,000. Flair Valley Court and Court can then either be overlaid or chip sealed for an additional \$14,000 or \$5,000, respectfully.

Blue Jay Valley Lane: Blue Jay Valley Lane provides access to residential properties off of Clear Valley Drive and terminates at a cul-de-sac. This street is approximately 470 feet long and has two 11-foot travel lanes. There are existing gravel/grass shoulders and driveways on both sides of the street. The pavement on Blue Jay Valley Lane is starting to experience light alligator cracking and isolated areas of settlement. The overall pavement condition is fair.

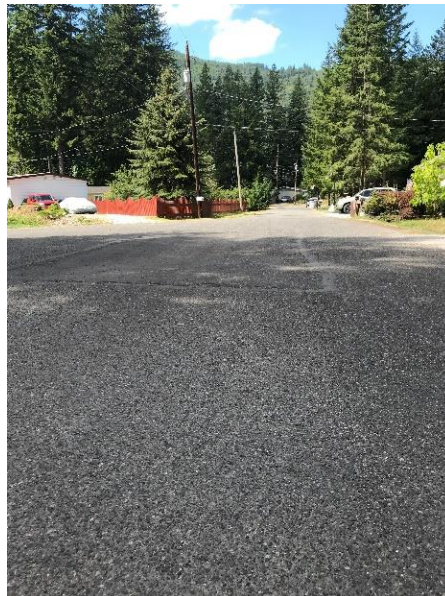
Based on available funding and need, the isolated areas of settlement and alligator cracking should be repaired on Blue Jay Valley Lane for \$5,000. Blue Jay Valley Lane can then either be overlaid or chip sealed for an additional \$27,000 or \$12,000, respectfully.

Blackbird Valley Lane and Place: Blackbird Valley Lane and Place provides access to residential properties off of Cleary Valley Drive and terminates at a cul-de-sac. This street is approximately 930 feet long and has two 11-foot travel lanes. There are existing gravel/grass shoulders and driveways on both sides of the street. The pavement on Blackbird Valley Lane and Place is starting to experience light alligator cracking and isolated areas of settlement. The overall pavement condition is fair.

Based on available funding and need, the isolated areas of settlement and alligator cracking should be repaired on Blackbird Valley Lane and Place for \$10,000. Blackbird Valley Lane and Place can then either be overlaid or chip sealed for an additional \$46,000 or \$21,000, respectfully.

Fall Valley Lane: Fall Valley Lane provides access to residential properties off the northern end of Clear Valley Drive and terminates at a cul-de-sac. This street is approximately 700 feet long and has two 11-foot travel lanes. There are existing gravel/grass shoulders and driveways on both sides of the street. The pavement on Fall Valley Lane is starting to experience light alligator cracking and isolated areas of settlement. There is also a distinct area where the pavement is settling at the mid-point of the street. The overall pavement condition is fair.

Based on available funding and need, the isolated areas of settlement and alligator cracking should be repaired on Fall Valley Lane for \$10,000. Fall Valley Lane can then either be overlaid or chip sealed for an additional \$36,000 or \$17,000, respectfully.



Fall Valley Lane: Settlement

Spur Valley Court: Spur Valley Court provides access to residential properties off Peaceful Valley Drive and terminates at a cul-de-sac. This street is approximately 200 feet long and has two 11-foot travel lanes. There are existing gravel/grass shoulders

and driveways on both sides of the street. The pavement on Spur Valley Court is starting to experience light alligator cracking and isolated areas of settlement. The overall pavement condition is fair.

Based on available funding and need, the isolated areas of settlement and alligator cracking should be repaired on Spur Valley Court for \$4,000. Spur Valley Court and Court can then either be overlaid or chip sealed for an additional \$17,000 or \$6,000, respectfully.

Boulder Valley Lane: Boulder Valley Lane provides access to residential properties off Peaceful Valley Drive and terminates at a cul-de-sac. This street is approximately 530 feet long and has two 11-foot travel lanes. There are existing gravel/grass shoulders and driveways on both sides of the street. The pavement on Boulder Valley Lane is starting to experience light alligator cracking and isolated areas of settlement. The overall pavement condition is fair to good.

Based on available funding and need, the isolated areas of settlement and alligator cracking should be repaired on Boulder Valley Lane for \$5,000. Boulder Valley Lane can then either be overlaid or chip sealed for an additional \$29,000 or \$13,000, respectfully.

Frontier Valley Lane: Frontier Valley Lane provides access to residential properties and terminates at a cul-de-sac. This street is approximately 550 feet long and has two 11-foot travel lanes. There are existing gravel/grass shoulders and driveways on both sides of the street. The pavement on Frontier Valley Lane is starting to experience light alligator cracking and isolated areas of settlement. The overall pavement condition is fair to good.

Based on available funding and need, the isolated areas of settlement and alligator cracking should be repaired on Frontier Valley Lane for \$9,000. Frontier Valley Lane can then either be overlaid or chip sealed for an additional \$29,000 or \$13,000, respectfully.

Green Valley Drive and Court: Green Valley Drive and Court provides access to residential properties off King Valley Drive and terminates at a cul-de-sac. This street is approximately 1,400 feet long and has two 11-foot travel lanes. There are existing gravel/grass shoulders and driveways on both sides of the street. Green Valley Drive appears to have been built within the last 20 years and the pavement is in good condition. This street appears to have about 8 to 10 years of serviceable life remaining before any and/or maintenance overlay is required.

Hopeful Valley Lane: Hopeful Valley Lane provides access to residential properties off Deep Valley Drive and terminates at a cul-de-sac. This street is approximately 480 feet long and has two 11-foot travel lanes. There are existing gravel/grass shoulders and driveways on both sides of the street. The pavement on Hopeful Valley Lane is starting

to experience light alligator cracking and isolated areas of settlement. The overall pavement condition is fair to good.

Based on available funding and need, the isolated areas of settlement and alligator cracking should be repaired on Hopeful Valley Lane for \$9,000. Hopeful Valley Lane can then either be overlaid or chip sealed for an additional \$28,000 or \$12,000, respectfully.

Red Valley Lane and Court: Red Valley Lane and Court provides access to residential properties off Deep Valley Drive and terminates at a cul-de-sac. This street is approximately 400 feet long and has two 11-foot travel lanes. There are existing gravel/grass shoulders and driveways on both sides of the street. The pavement on both Red Valley Lane and Red Valley Court is starting to experience light alligator cracking and isolated areas of settlement. The pavement on both streets is in good condition.

Based on available funding and need, the isolated areas of settlement and alligator cracking should be repaired on Red Valley Lane and Court for \$4,000. Red Valley Lane and Court can then either be overlaid or chip sealed for an additional \$14,000 or \$5,000, respectfully.

Ruby Valley Court: Ruby Valley Court provides access to residential properties off Deep Valley Drive and terminates at a cul-de-sac. This street is approximately 175 feet long and has two 11-foot travel lanes. There are existing gravel/grass shoulders and driveways on both sides of the street. The pavement on Ruby Valley Court is starting to experience moderate alligator cracking and isolated areas of settlement. The overall pavement condition is fair.

Based on available funding and need, the isolated areas of settlement and alligator cracking should be repaired on Ruby Valley Court for \$5,000. Red Valley Court and Court can then either be overlaid or chip sealed for an additional \$14,000 or \$5,000, respectfully.

Happy Valley Court: Happy Valley Court provides access to residential properties off Balfour Valley Drive and terminates at a cul-de-sac. This street is approximately 170 feet long and has two 11-foot travel lanes. There are existing gravel/grass shoulders and driveways on both sides of the street. The pavement on Happy Valley Court is starting to experience moderate alligator cracking and isolated areas of settlement. The overall pavement condition is fair.

Based on available funding and need, the isolated areas of settlement and alligator cracking should be repaired on Happy Valley Court for \$4,000. Happy Valley Court and Court can then either be overlaid or chip sealed for an additional \$14,000 or \$5,000, respectfully.



Happy Valley Court: Alligator Cracking

EXISTING UTILITIES

Utility service within the Club consists of water and sanitary sewer (provided by Whatcom County Water District 13), electrical (provided by PSE), cable television (provided by Comcast), and telephone (provided by Xfinity). Of these facilities only the sanitary sewer is located within paved areas of the street. Based on review of the District's maps, there are approximately 68 manholes and seven cleanouts located within the street.

During our survey and discussion with District staff, we noted the following issues and/or concerns with the existing utilities:

1. Pavement has settled around several of the manholes, creating an undesirable bumps in the roadway.
2. Pavement has settled over the existing sewer system. This may be a sign of poor trench compaction or that the sewer pipe has broken and dirt and gravel is being washed into the sewer pipe.
3. The cast iron manhole rings have been chipped on several of the manholes. This appears to be linked to the pavement settlement and snow plows.
4. Existing water services, below the pavement surface have been known to break and leak.

Prior to any work on the roadway, the District should be notified and allowed time to address any issues and be allowed the opportunity to replace and/or repair their facilities.

TRAFFIC CALMING

Vehicle speeds along the major roads is a concern of the residents and the Board. In general, there are three measures used to slow, or calm, traffic. These include vertical deflections (i.e., speed humps, raised intersections, etc.), horizontal shifts (i.e., traffic circles, chokers, chicanes, etc.) or roadway narrowing (road diets), corner extensions/bulb-outs, medians, etc.). Due to the rural nature of the Club's roadways, most of these measures are not applicable or feasible. For the purpose of this report, the main focus will be speed humps.

Speed Humps are generally 12 to 14 feet long and extend across the roadway. They range in height between 2 to 4 inches, with 3 inches being the preferred height. Speed humps are generally placed in series, typically spaced 260 to 500 feet apart. Traffic signs and pavement markings are installed to notify drivers of their locations. Issues with speed humps include an increase in speed between the speed humps, and a delay in response time for fire trucks and ambulances. Speed humps can be either permanent or temporary. Permanent speed humps are built with asphalt pavement and temporary speed humps are constructed with rubber and/or plastic material. Depending on the type of speed hump, the cost per each could vary from \$1,000 to \$4,000.

Before implementing any traffic calming element, the Board should gain input from the residents on the preferred method.

CONCLUSION

Current engineering standards utilize a 20-year design span for typical asphalt pavement streets. Considering that the Club's street system is over 40 years old, the streets have fared well with most of the streets still in serviceable condition. Overall, the Club's street system is considered to be in fair condition. The current condition can be attributed to the low traffic volumes and the stability of the underlying soils. Based on these conditions, we feel that repairing the existing street surface and installing a new 2-inch overlay will extend the life for at least another 20 to 30 years. As an alternative, the Club may choose to install a chip seal over the repaired street surface. It can be expected that a chip seal will last for about 10 years. Installing an overlay will have a higher up-front cost but will last 2 to 3 times longer than a chip seal. As such, the following project phasing scenarios assume the installation of an overlay.

Because the overall cost to maintain the street system is so high, it is recommended that the work described herein be completed in phases. Phases 1, 2 and 3 will cover the work on all of the Club's major roads and should be completed within the next 8 to 10 years. Phasing for the remaining minor roads is not discussed here in and should be evaluated by the Club members once the major roads have been completed.

PHASE 1

Peaceful Valley Drive – Repair with full-depth reclamation and install a 2-inch overlay.

King Valley Drive – Repair the isolated areas of alligator cracking and settlement.

Deep Valley Drive – Repair the isolated areas of alligator cracking and settlement.

It is recommended that Phase 1 occurs within the next 2 to 3 years before the condition of King Valley Drive and Deep Valley Drive deteriorate to a point where a full-depth reclamation process is required. The construction cost for Phase 1 is \$241,000. Engineering and construction management (including inspection), if desired, is \$36,150.

PHASE 2

Sprague Valley Drive – Repair with full-depth reclamation and install a 2-inch overlay.

Clear Valley Drive – Repair the isolated areas of alligator cracking and settlement.

It is recommended that Phase 2 occurs within the next 5 years before the condition of Clear Valley Drive deteriorates to a point where a full-depth reclamation process is required. The construction cost for Phase 2 is \$278,000. Engineering and construction management (including inspection), if desired, is \$41,700.

PHASE 3

King Valley Drive – Install a 2-inch overlay.

Deep Valley Drive – Install a 2-inch overlay.

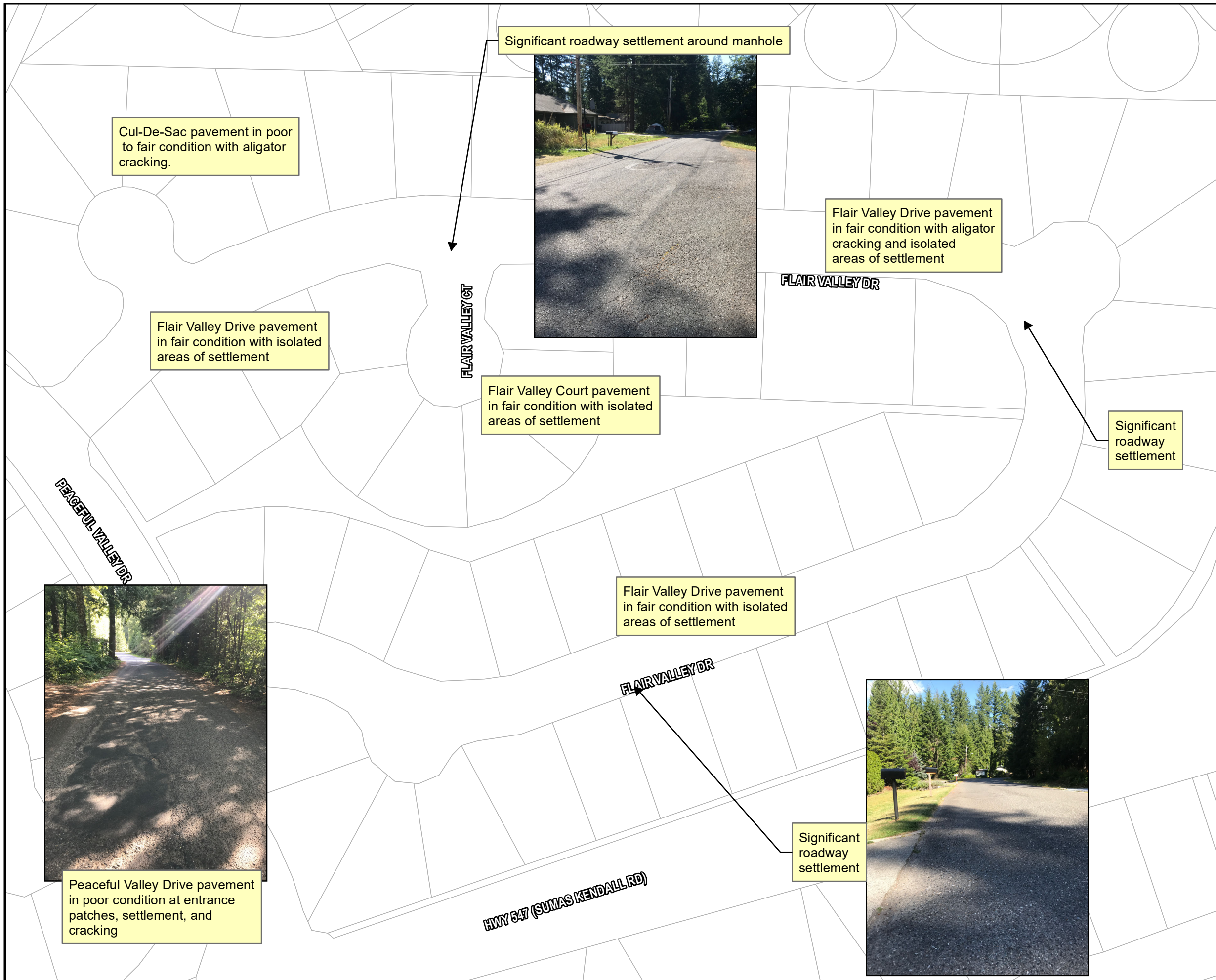
Clear Valley Drive – Install a 2-inch overlay.

It is recommended that Phase 3 occurs within the next 7 to 10 years. The construction cost for Phase 3 is \$192,000. Engineering and construction management (including inspection), if desired, is \$28,800.

All estimated construction costs provided herein are based on 2020 material costs in rural Whatcom County and bids the Club received in 2018. Because the Club is not a public agency, this work will not be subject to bidding laws and prevailing wages which will affect project costs. However, the Club will be required to pay current State sales tax on all work completed. Current sales tax rate is 8.5 percent. Depending on the overall size of the project, construction costs will vary. For larger projects, with more material quantities, there will be a reduction in cost due to an economy of scale. Larger projects may see a lower price for materials while smaller may see higher prices. Economy of scale should be considered when project limits and budgets are prepared.

APPENDIX A

MAPS



Significant roadway settlement around manhole



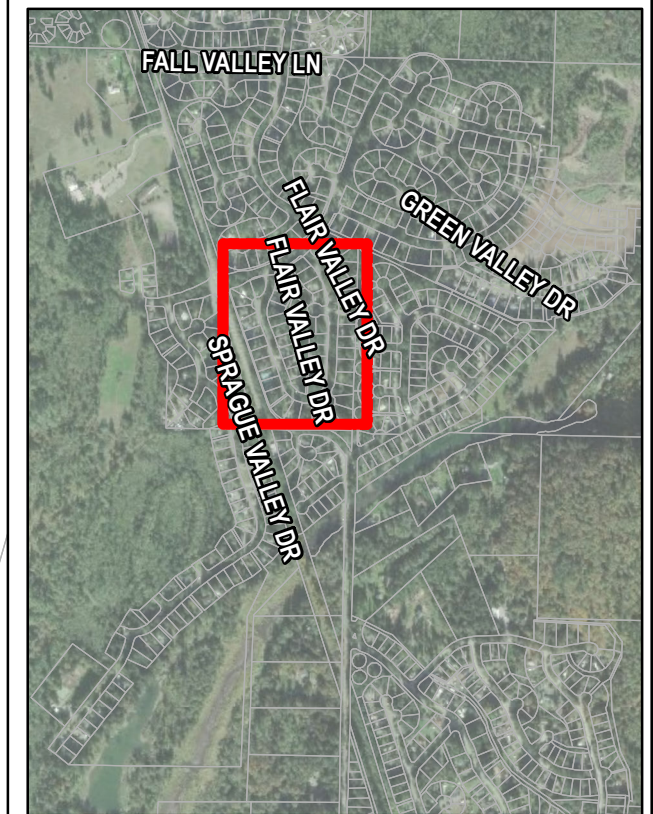
Significant roadway settlement



Peaceful Valley Drive pavement in poor condition at entrance patches, settlement, and cracking

Legend

PARCELS



Source: Whacom County & City of Bellingham

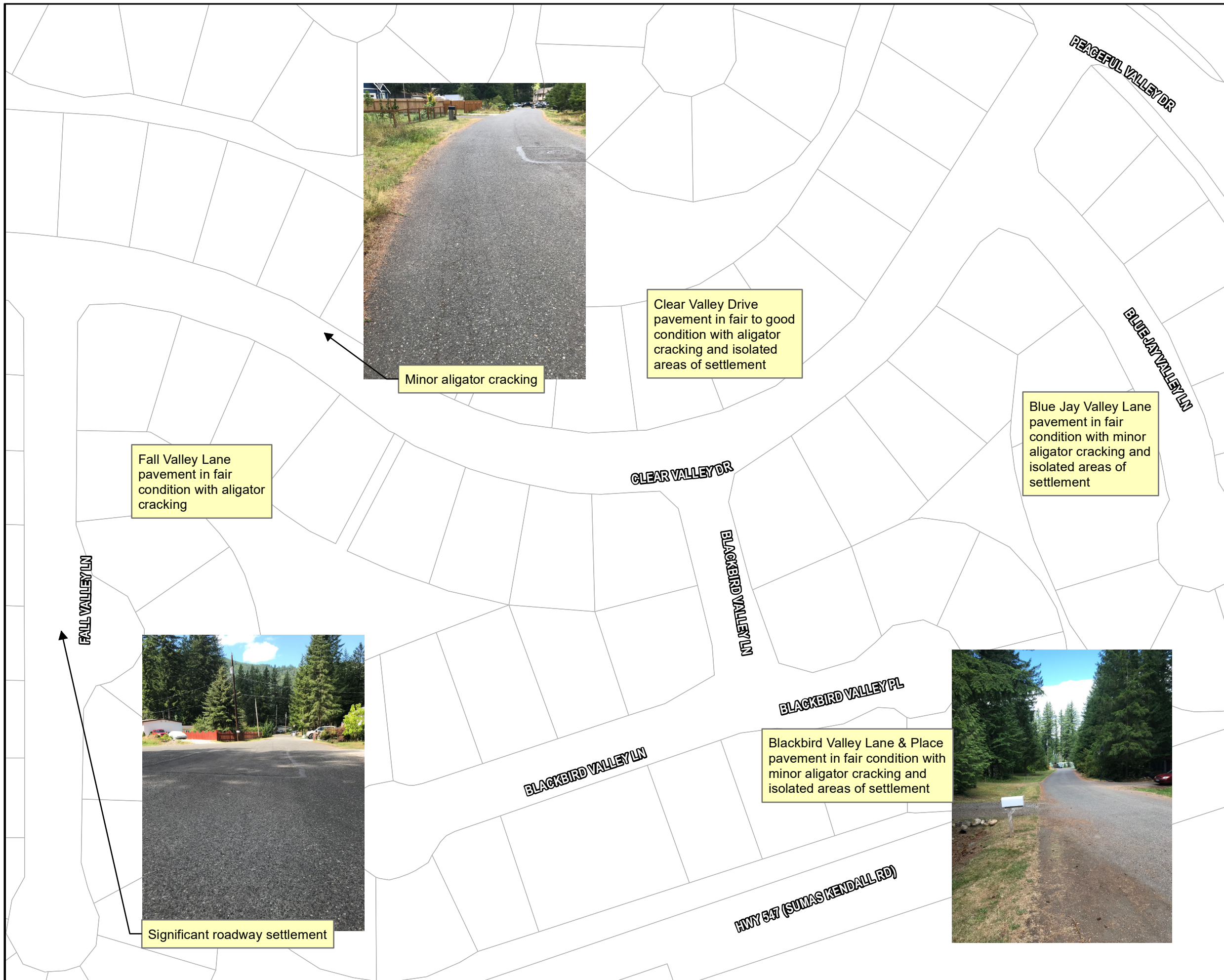


0 100 200

1" = 100'

**PEACEFUL VALLEY
COUNTRY CLUB
PAVEMENT ASSESSMENT
FIGURE 1
FLAIR VALLEY DR**





Minor alligator cracking

Clear Valley Drive pavement in fair to good condition with alligator cracking and isolated areas of settlement

Blue Jay Valley Lane pavement in fair condition with minor alligator cracking and isolated areas of settlement

Fall Valley Lane pavement in fair condition with alligator cracking



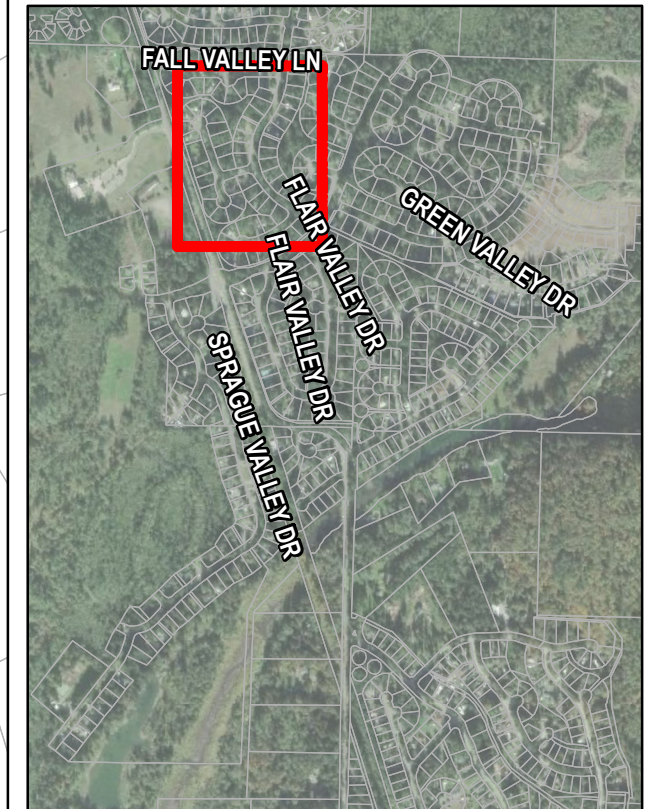
Significant roadway settlement

Blackbird Valley Lane & Place pavement in fair condition with minor alligator cracking and isolated areas of settlement

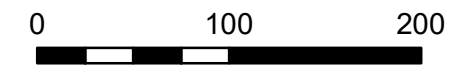


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PARCELS



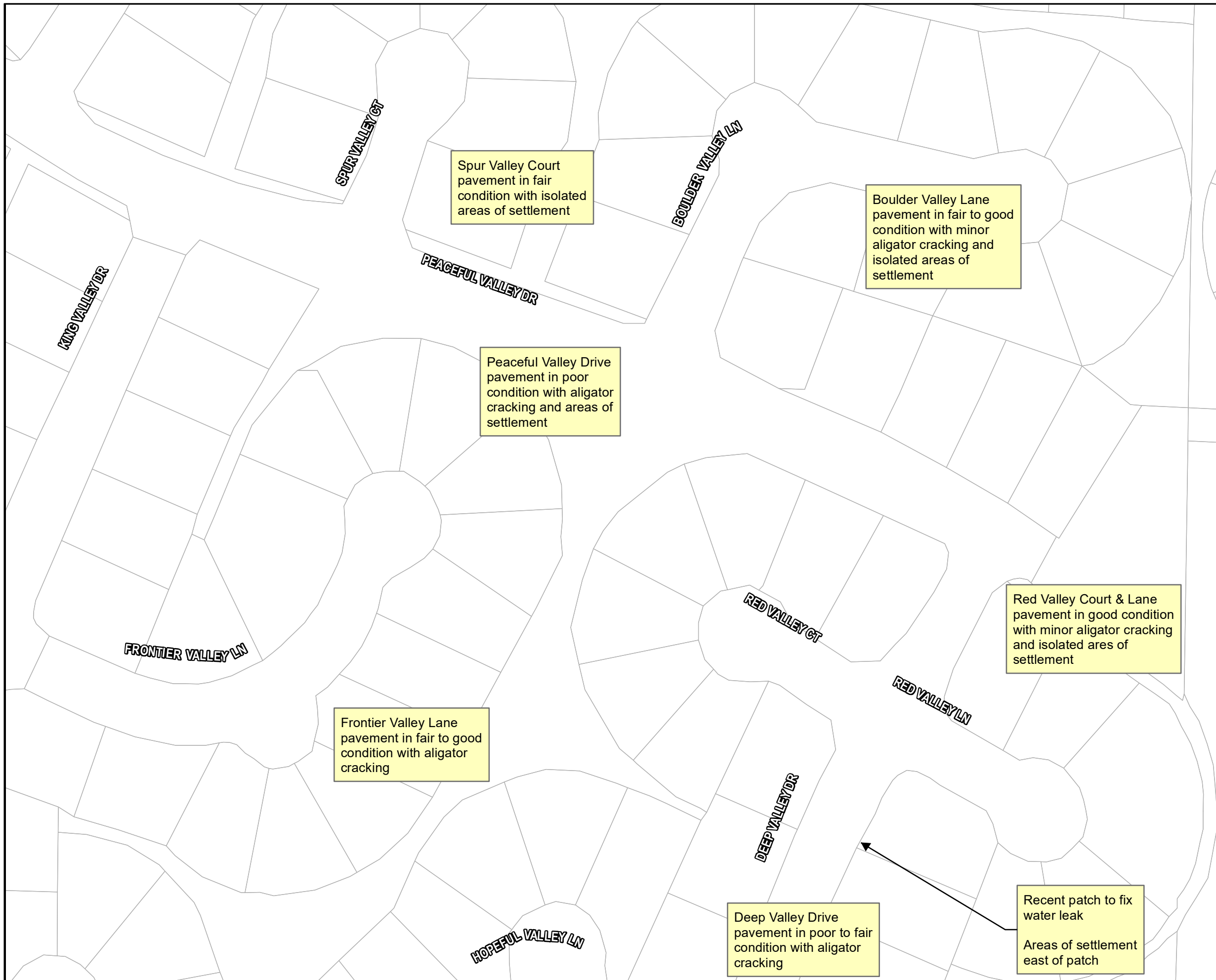
Source: Whacom County & City of Bellingham



1" = 100'

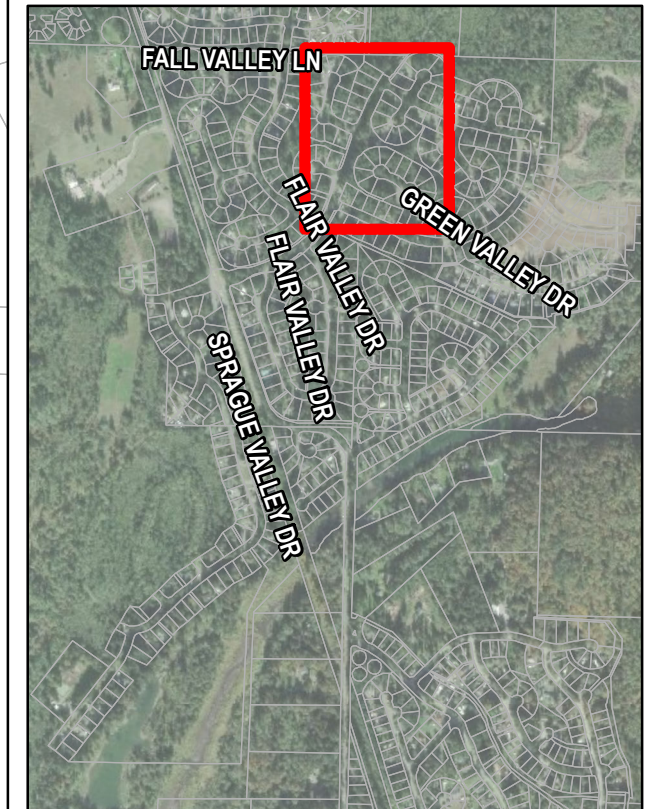
**PEACEFUL VALLEY
COUNTRY CLUB
PAVEMENT ASSESSMENT
FIGURE 2
CLEAR VALLEY DR**



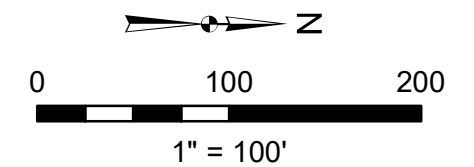


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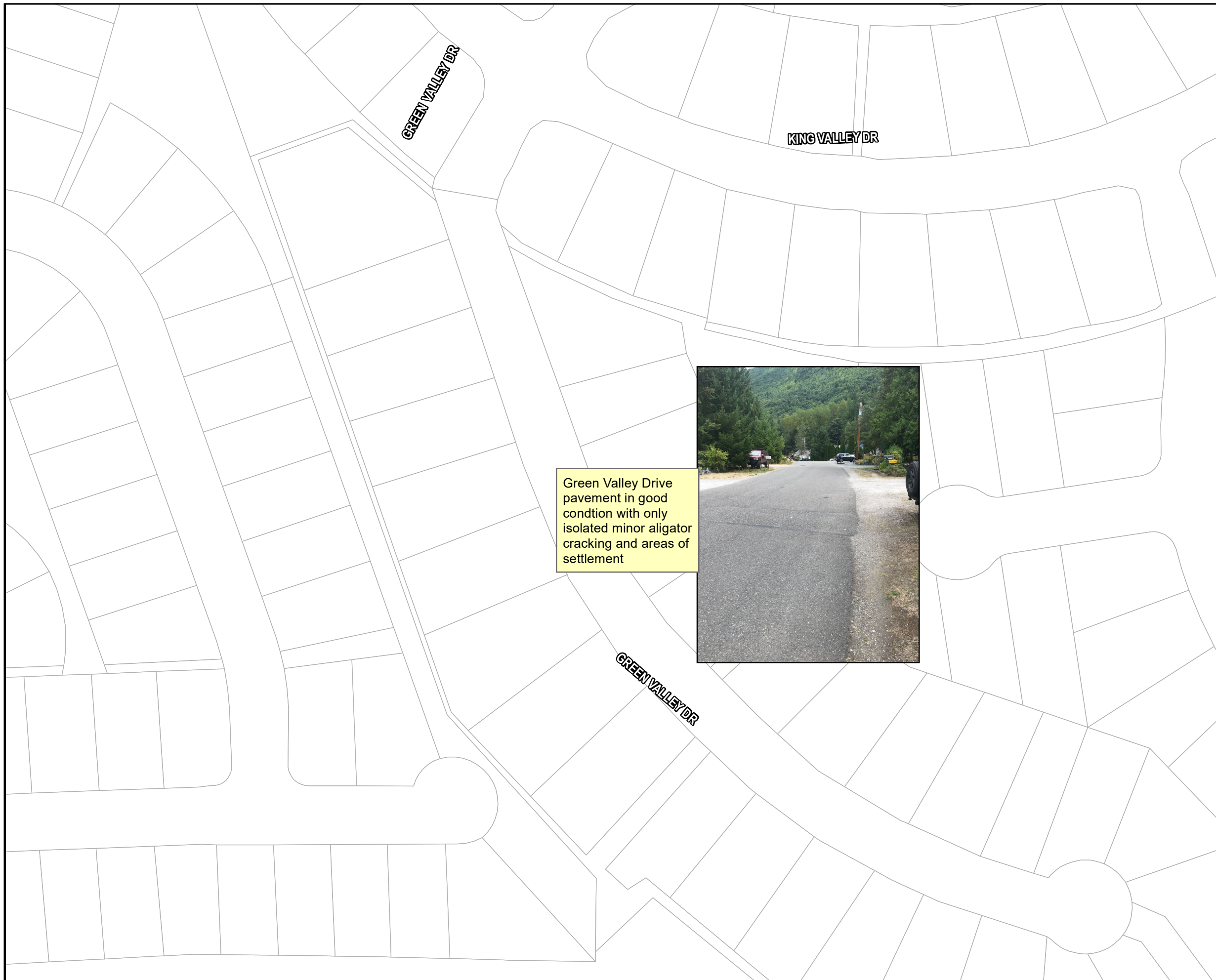


Source: Whacom County & City of Bellingham



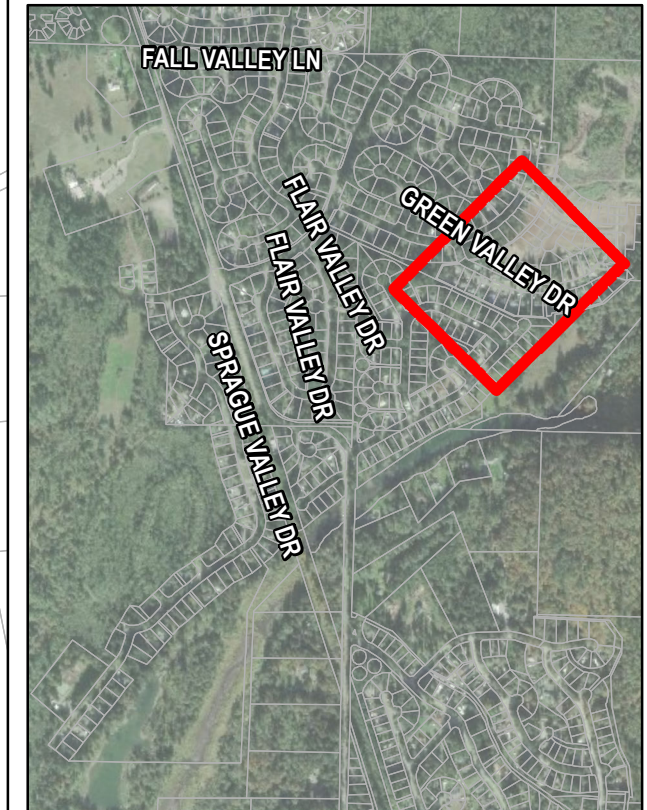
**PEACEFUL VALLEY
COUNTRY CLUB
PAVEMENT ASSESSMENT
FIGURE 3
PEACEFUL VALLEY DR**



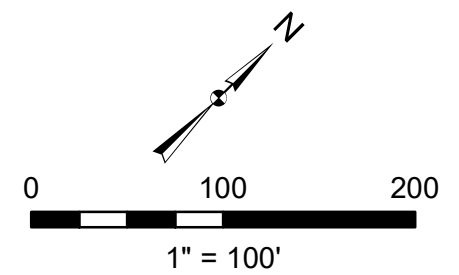


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PARCELS

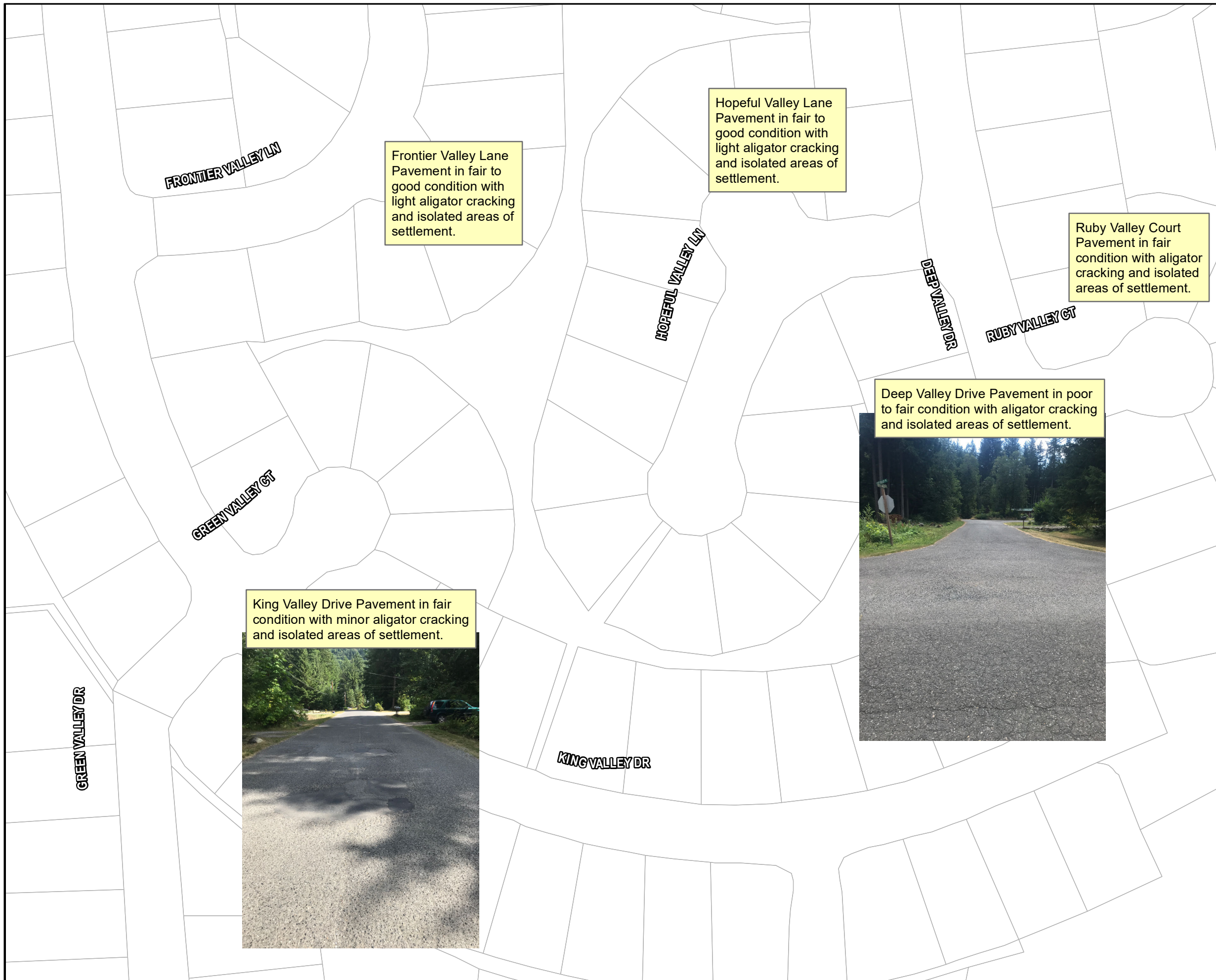


Source: Whacom County & City of Bellingham



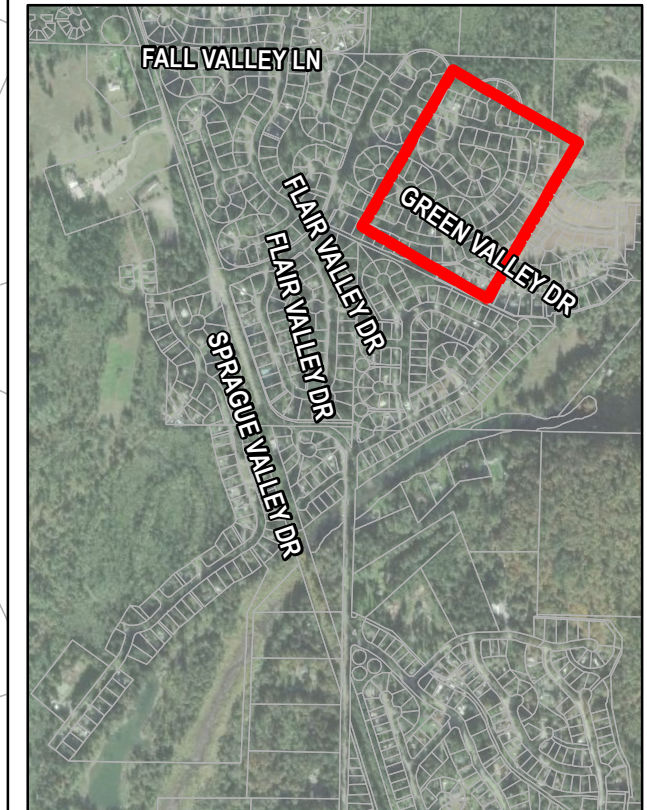
**PEACEFUL VALLEY
COUNTRY CLUB
PAVEMENT ASSESSMENT
FIGURE 4
GREEN VALLEY DR**

Gray & Osborne, Inc.
CONSULTING ENGINEERS

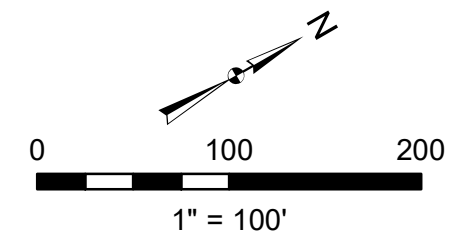


Legend

PARCELS



Source: Whacom County & City of Bellingham



**PEACEFUL VALLEY
COUNTRY CLUB
PAVEMENT ASSESSMENT
FIGURE 5
KING VALLEY DR**

Gray & Osborne, Inc.
CONSULTING ENGINEERS

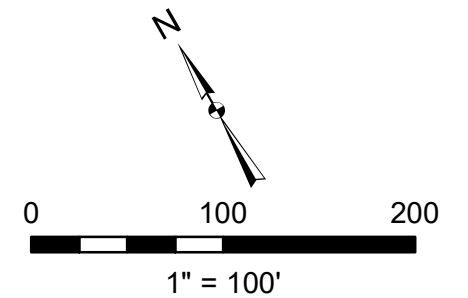


Legend

PARCELS



Source: Whacom County & City of Bellingham



**PEACEFUL VALLEY
COUNTRY CLUB
PAVEMENT ASSESSMENT
FIGURE 6
BALFOUR VALLEY DR**



Gray & Osborne, Inc.
CONSULTING ENGINEERS



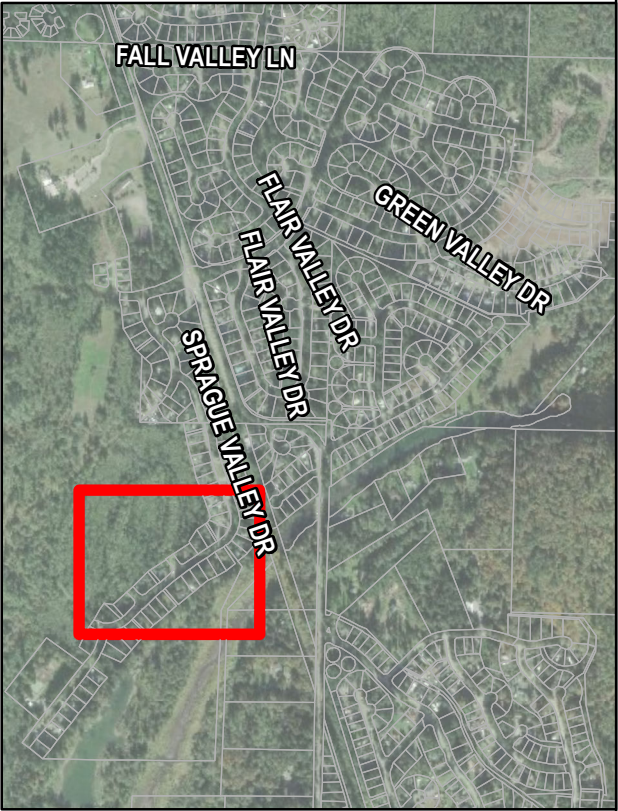
Sprague Valley Drive pavement is in poor condition with significant alligator cracking.



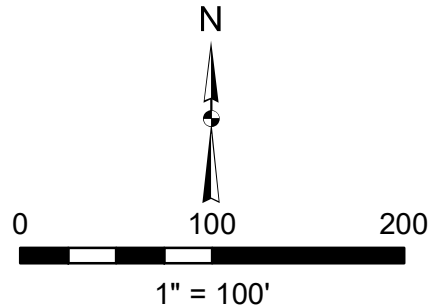
Sprague Valley Drive pavement is in poor condition with significant alligator cracking.

Legend

PARCELS

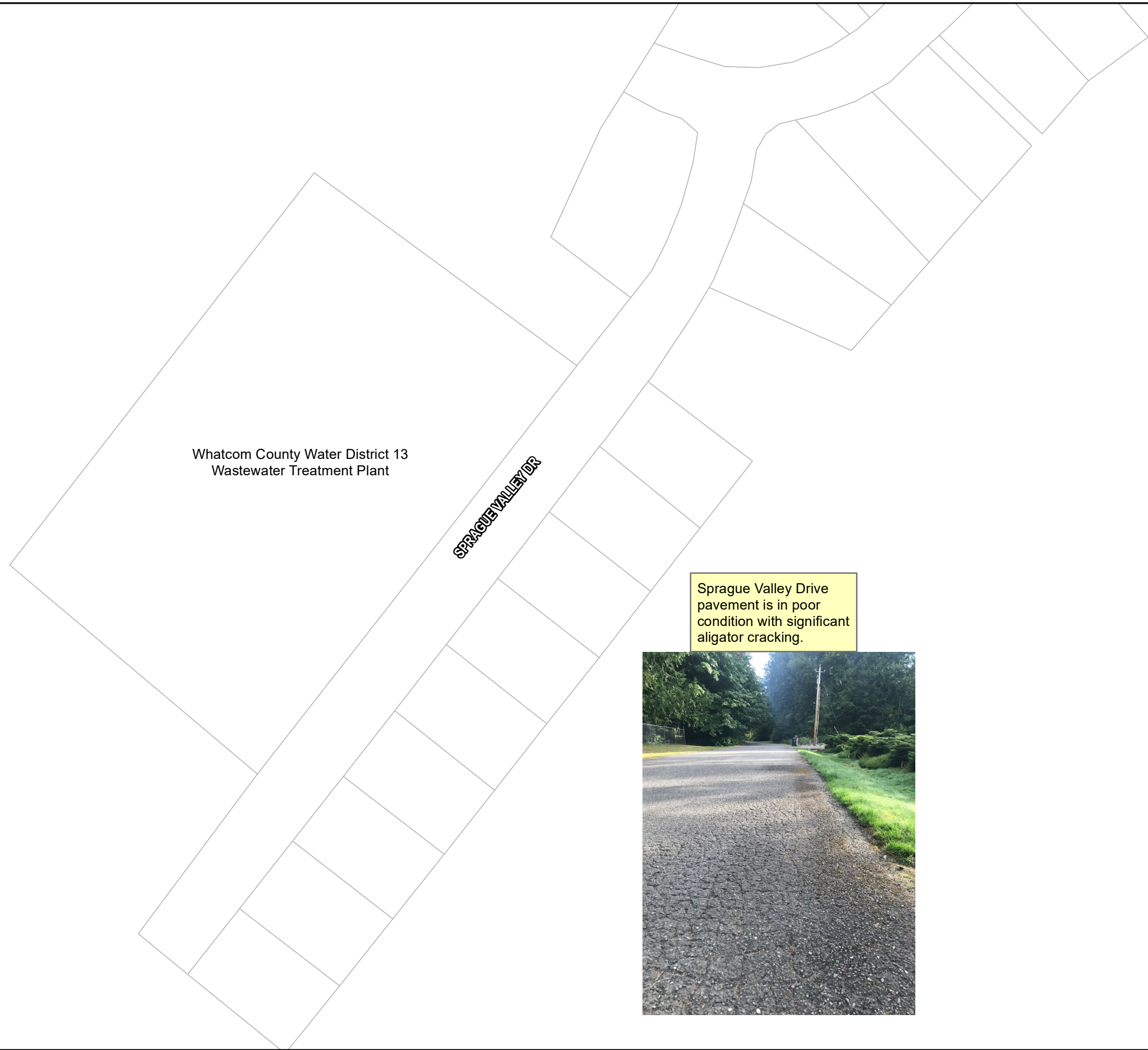


Source: Whacom County & City of Bellingham



**PEACEFUL VALLEY
COUNTRY CLUB
PAVEMENT ASSESSMENT
FIGURE 7
SPRAGUE VALLEY DR (1/2)**





Whatcom County Water District 13
Wastewater Treatment Plant

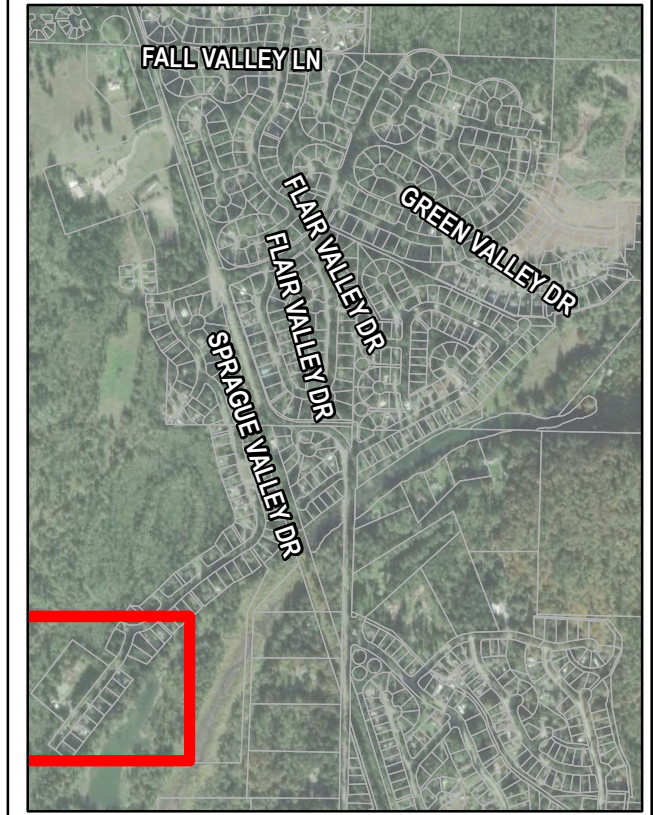
SPRAGUE VALLEY DR

Sprague Valley Drive
pavement is in poor
condition with significant
alligator cracking.

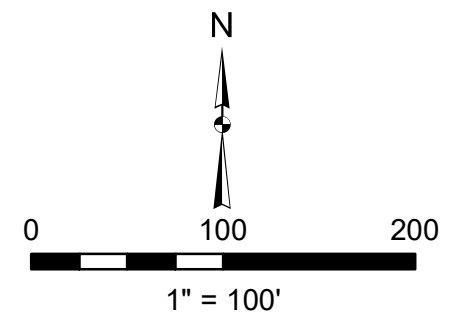


Legend

PARCELS



Source: Whacom County & City of Bellingham



**PEACEFUL VALLEY
COUNTRY CLUB**
 PAVEMENT ASSESSMENT
 FIGURE 8
 SPRAGUE VALLEY DR (2/2)

Gray & Osborne, Inc.
 CONSULTING ENGINEERS

APPENDIX B
COST ESTIMATES

**Planning Level Cost Estimate
Peaceful Valley Country Club
Pavement Assessment**

Road Width=	22 Feet
Lane Feet=	2,300 Feet
FDR %=	100.00% Percentage (based on site visit)
FDR Area=	50,600 Square Feet
Repair %=	0.00% Percentage (Assumption)
Repair Area=	0 Square Feet

STREET SEGMENT: Peaceful Valley Drive

REPAIR						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 7,000	\$	7,000
2	Temporary Traffic Control	1	LS	\$ 2,300	\$	2,300
3	Pulverization for Full Depth Reclamation (FDR)	5,630	SY	\$ 12	\$	67,560
4	Pavement Repair Excavation, Incl. Haul	0	SY	\$ 20	\$	-
5	Hot Mix Asphalt for Pavement Repair	0	TN	\$ 120	\$	-
Subtotal					\$	76,860
Sales Tax at 8.5%					\$	6,533
Construction Contingencies at 10%					\$	7,686
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	92,000
15% Design Engineering and Construction Management Services					\$	13,800
TOTAL PROJECT COSTS (ROUNDED)					\$	106,000

OVERLAY						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 7,500	\$	7,500
2	Temporary Traffic Control	1	LS	\$ 2,300	\$	2,300
3	Hot Mix Asphalt	650	TN	\$ 100	\$	65,000
4	Crushed Surfacing Top Course (Shoulder Repair)	110	TN	\$ 30	\$	3,300
5	Adjust Monument to Grade	2	EA	\$ 500	\$	1,000
6	Adjust Manhole to Grade	5	EA	\$ 500	\$	2,500
Subtotal					\$	81,600
Sales Tax at 8.5%					\$	6,936
Construction Contingencies at 10%					\$	8,160
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	97,000
15% Design Engineering and Construction Management Services					\$	14,550
TOTAL PROJECT COSTS (ROUNDED)					\$	112,000

CHIP SEAL						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 6,600	\$	6,600
2	Temporary Traffic Control	1	LS	\$ 2,300	\$	2,300
3	Emulsified Asphalt (Two Applications)	22	TN	\$ 1,000	\$	21,927
4	Asphalt for Fog Seal	2	TN	\$ 900	\$	1,478
5	Furnishing and Placing Choke Stone	5,700	SY	\$ 3	\$	17,100
6	Furnishing and Placing Crushed Screenings	5,700	SY	\$ 4	\$	22,800
Subtotal					\$	72,204
Sales Tax at 8.5%					\$	6,137
Construction Contingencies at 10%					\$	7,220
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	86,000
15% Design Engineering and Construction Management Services					\$	12,900
TOTAL PROJECT COSTS (ROUNDED)					\$	99,000

**Planning Level Cost Estimate
Peaceful Valley Country Club
Pavement Assessment**

Road Width=	22 Feet
Lane Feet=	3,280 Feet
FDR %=	100.00% Percentage (based on site visit)
FDR Area=	72,160 Square Feet
Repair %=	0.00% Percentage (Assumption)
Repair Area=	0 Square Feet

STREET SEGMENT: Sprague Valley Drive

REPAIR						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 10,000	\$	10,000
2	Temporary Traffic Control	1	LS	\$ 3,300	\$	3,300
3	Pulverization for Full Depth Reclamation (FDR)	8,020	SY	\$ 12	\$	96,240
4	Pavement Repair Excavation, Incl. Haul	0	SY	\$ 20	\$	-
5	Hot Mix Asphalt for Pavement Repair	0	TN	\$ 120	\$	-
Subtotal					\$	109,540
Sales Tax at 8.5%					\$	9,311
Construction Contingencies at 10%					\$	10,954
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	130,000
15% Design Engineering and Construction Management Services					\$	19,500
TOTAL PROJECT COSTS (ROUNDED)					\$	150,000

OVERLAY						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 10,400	\$	10,400
2	Temporary Traffic Control	1	LS	\$ 3,300	\$	3,300
3	Hot Mix Asphalt	920	TN	\$ 100	\$	92,000
4	Crushed Surfacing Top Course (Shoulder Repair)	150	TN	\$ 30	\$	4,500
5	Adjust Monument to Grade	2	EA	\$ 500	\$	1,000
6	Adjust Manhole to Grade	5	EA	\$ 500	\$	2,500
Subtotal					\$	113,700
Sales Tax at 8.5%					\$	9,665
Construction Contingencies at 10%					\$	11,370
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	135,000
15% Design Engineering and Construction Management Services					\$	20,250
TOTAL PROJECT COSTS (ROUNDED)					\$	156,000

CHIP SEAL						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 9,400	\$	9,400
2	Temporary Traffic Control	1	LS	\$ 3,300	\$	3,300
3	Emulsified Asphalt (Two Applications)	31	TN	\$ 1,000	\$	31,269
4	Asphalt for Fog Seal	2	TN	\$ 900	\$	2,107
5	Furnishing and Placing Choke Stone	8,100	SY	\$ 3	\$	24,300
6	Furnishing and Placing Crushed Screenings	8,100	SY	\$ 4	\$	32,400
Subtotal					\$	102,776
Sales Tax at 8.5%					\$	8,736
Construction Contingencies at 10%					\$	10,278
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	122,000
15% Design Engineering and Construction Management Services					\$	18,300
TOTAL PROJECT COSTS (ROUNDED)					\$	141,000

**Planning Level Cost Estimate
Peaceful Valley Country Club
Pavement Assessment**

Road Width=	22 Feet
Lane Feet=	1,460 Feet
FDR %=	0.00% Percentage (based on site visit)
FDR Area=	0 Square Feet
Repair %=	6.00% Percentage (Assumption)
Repair Area=	1930 Square Feet

STREET SEGMENT: Clear Valley Drive

REPAIR						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 1,000	\$	1,000
2	Temporary Traffic Control	1	LS	\$ 1,500	\$	1,500
3	Pulverization for Full Depth Reclamation (FDR)	0	SY	\$ 12	\$	-
4	Pavement Repair Excavation, Incl. Haul	220	SY	\$ 20	\$	4,400
5	Hot Mix Asphalt for Pavement Repair	30	TN	\$ 120	\$	3,600
Subtotal					\$	10,500
Sales Tax at 8.5%					\$	893
Construction Contingencies at 10%					\$	1,050
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	13,000
15% Design Engineering and Construction Management Services					\$	1,950
TOTAL PROJECT COSTS (ROUNDED)					\$	15,000

OVERLAY						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 4,900	\$	4,900
2	Temporary Traffic Control	1	LS	\$ 1,500	\$	1,500
3	Hot Mix Asphalt	410	TN	\$ 100	\$	41,000
4	Crushed Surfacing Top Course (Shoulder Repair)	70	TN	\$ 30	\$	2,100
5	Adjust Monument to Grade	2	EA	\$ 500	\$	1,000
6	Adjust Manhole to Grade	5	EA	\$ 500	\$	2,500
Subtotal					\$	53,000
Sales Tax at 8.5%					\$	4,505
Construction Contingencies at 10%					\$	5,300
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	63,000
15% Design Engineering and Construction Management Services					\$	9,450
TOTAL PROJECT COSTS (ROUNDED)					\$	73,000

CHIP SEAL						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 2,400	\$	2,400
2	Temporary Traffic Control	1	LS	\$ 1,500	\$	1,500
3	Emulsified Asphalt	6	TN	\$ 1,000	\$	6,424
4	Asphalt for Fog Seal	1	TN	\$ 900	\$	938
5	Furnishing and Placing Crushed Screenings	3,600	SY	\$ 4	\$	14,400
Subtotal					\$	25,662
Sales Tax at 8.5%					\$	2,181
Construction Contingencies at 10%					\$	2,566
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	31,000
15% Design Engineering and Construction Management Services					\$	4,650
TOTAL PROJECT COSTS (ROUNDED)					\$	36,000

**Planning Level Cost Estimate
Peaceful Valley Country Club
Pavement Assessment**

Road Width=	22 Feet
Lane Feet=	1,880 Feet
FDR %=	0.00% Percentage (based on site visit)
FDR Area=	0 Square Feet
Repair %=	12.00% Percentage (Assumption)
Repair Area=	4970 Square Feet

STREET SEGMENT: King Valley Drive

REPAIR						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 2,300	\$	2,300
2	Temporary Traffic Control	1	LS	\$ 1,900	\$	1,900
3	Pulverization for Full Depth Reclamation (FDR)	0	SY	\$ 12	\$	-
4	Pavement Repair Excavation, Incl. Haul	560	SY	\$ 20	\$	11,200
5	Hot Mix Asphalt for Pavement Repair	80	TN	\$ 120	\$	9,600
Subtotal					\$	25,000
Sales Tax at 8.5%					\$	2,125
Construction Contingencies at 10%					\$	2,500
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	30,000
15% Design Engineering and Construction Management Services					\$	4,500
TOTAL PROJECT COSTS (ROUNDED)					\$	35,000

OVERLAY						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 6,200	\$	6,200
2	Temporary Traffic Control	1	LS	\$ 1,900	\$	1,900
3	Hot Mix Asphalt	530	TN	\$ 100	\$	53,000
4	Crushed Surfacing Top Course (Shoulder Repair)	90	TN	\$ 30	\$	2,700
5	Adjust Monument to Grade	2	EA	\$ 500	\$	1,000
6	Adjust Manhole to Grade	5	EA	\$ 500	\$	2,500
Subtotal					\$	67,300
Sales Tax at 8.5%					\$	5,721
Construction Contingencies at 10%					\$	6,730
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	80,000
15% Design Engineering and Construction Management Services					\$	12,000
TOTAL PROJECT COSTS (ROUNDED)					\$	92,000

CHIP SEAL						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 3,000	\$	3,000
2	Temporary Traffic Control	1	LS	\$ 1,900	\$	1,900
3	Emulsified Asphalt	8	TN	\$ 1,000	\$	8,272
4	Asphalt for Fog Seal	1	TN	\$ 900	\$	1,208
5	Furnishing and Placing Crushed Screenings	4,600	SY	\$ 4	\$	18,400
Subtotal					\$	32,780
Sales Tax at 8.5%					\$	2,786
Construction Contingencies at 10%					\$	3,278
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	39,000
15% Design Engineering and Construction Management Services					\$	5,850
TOTAL PROJECT COSTS (ROUNDED)					\$	45,000

**Planning Level Cost Estimate
Peaceful Valley Country Club
Pavement Assessment**

Road Width=	22 Feet
Lane Feet=	1,080 Feet
FDR %=	0.00% Percentage (based on site visit)
FDR Area=	0 Square Feet
Repair %=	15.00% Percentage (Assumption)
Repair Area=	3570 Square Feet

STREET SEGMENT: Deep Valley Drive

PAVEMENT REPAIRS							
Item	Description	Quantity	Units	Unit Cost	Cost		
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 2,300	\$ 2,300	\$23,000	
2	Temporary Traffic Control	1	LS	\$ 3,000	\$ 3,000	\$2/lane foot	
3	Pulverization for Full Depth Reclamation (FDR)	0	SY	\$ 10	\$ -	Full Depth Reclamation (FDR)	
4	Crushed Surfacing Top Course	0	TN	\$ 50	\$ -	2-inch in FDR areas	
5	Pavement Repair Excavation, Incl. Haul	400	SY	\$ 20	\$ 8,000	2-inch removal depth	
6	Hot Mix Asphalt for Pavement Repair	60	TN	\$ 200	\$ 12,000	2-inch for pavement repair	
Subtotal					\$ 25,300		
Sales Tax at 0% per W.S. Revenue Rule No. 171					\$ -		
Construction Contingencies at 20%					\$ 5,060		
TOTAL CONSTRUCTION COSTS					\$ 31,000		
20% Design Engineering and Construction Management Services					\$ 6,200		
TOTAL PROJECT COSTS					\$ 38,000		

OVERLAY							
Item	Description	Quantity	Units	Unit Cost	Cost		
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 4,100	\$ 4,100	\$40,600	
2	Temporary Traffic Control	1	LS	\$ 3,000	\$ 3,000	\$2/lane foot	
3	Hot Mix Asphalt	310	TN	\$ 110	\$ 34,100	2-inch overlay depth	
4	Adjust Monument to Grade	2	EA	\$ 500	\$ 1,000	Estimate	
5	Adjust Manhole to Grade	5	EA	\$ 500	\$ 2,500	Estimate	
Subtotal					\$ 44,700		
Sales Tax at 0% per W.S. Revenue Rule No. 171					\$ -		
Construction Contingencies at 20%					\$ 8,940		
TOTAL CONSTRUCTION COSTS					\$ 54,000		
20% Design Engineering and Construction Management Services					\$ 10,800		
TOTAL PROJECT COSTS					\$ 65,000		

CHIP SEAL							
Item	Description	Quantity	Units	Unit Cost	Cost		
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 2,000	\$ 2,000	\$19,246	
2	Temporary Traffic Control	1	LS	\$ 3,000	\$ 3,000	\$2/lane foot	
3	Emulsified Asphalt	5	TN	\$ 1,000	\$ 4,752	0.0018 TN/SY (WSDOT Design Manual)	
4	Asphalt for Fog Seal	1	TN	\$ 900	\$ 694	0.000292 TN/SY (WSDOT Design Manual)	
5	Furnishing and Placing Crushed Screenings	2,700	SY	\$ 4	\$ 10,800		
Subtotal					\$ 21,246		
Sales Tax at 0% per W.S. Revenue Rule No. 171					\$ -		
Construction Contingencies at 20%					\$ 4,249		
TOTAL CONSTRUCTION COSTS					\$ 26,000		
20% Design Engineering and Construction Management Services					\$ 5,200		
TOTAL PROJECT COSTS					\$ 32,000		

**Planning Level Cost Estimate
Peaceful Valley Country Club
Pavement Assessment**

Road Width=	22 Feet
Lane Feet=	2,280 Feet
FDR %=	0.00% Percentage (based on site visit)
FDR Area=	0 Square Feet
Repair %=	8.00% Percentage (Assumption)
Repair Area=	4020 Square Feet

STREET SEGMENT: Flair Valley Drive

REPAIR						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 1,900	\$	1,900
2	Temporary Traffic Control	1	LS	\$ 2,300	\$	2,300
3	Pulverization for Full Depth Reclamation (FDR)	0	SY	\$ 12	\$	-
4	Pavement Repair Excavation, Incl. Haul	450	SY	\$ 20	\$	9,000
5	Hot Mix Asphalt for Pavement Repair	60	TN	\$ 120	\$	7,200
Subtotal					\$	20,400
Sales Tax at 8.5%					\$	1,734
Construction Contingencies at 10%					\$	2,040
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	25,000
15% Design Engineering and Construction Management Services					\$	3,750
TOTAL PROJECT COSTS (ROUNDED)					\$	29,000

OVERLAY						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 7,400	\$	7,400
2	Temporary Traffic Control	1	LS	\$ 2,300	\$	2,300
3	Hot Mix Asphalt	640	TN	\$ 100	\$	64,000
4	Crushed Surfacing Top Course (Shoulder Repair)	110	TN	\$ 30	\$	3,300
5	Adjust Monument to Grade	2	EA	\$ 500	\$	1,000
6	Adjust Manhole to Grade	5	EA	\$ 500	\$	2,500
Subtotal					\$	80,500
Sales Tax at 8.5%					\$	6,843
Construction Contingencies at 10%					\$	8,050
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	96,000
15% Design Engineering and Construction Management Services					\$	14,400
TOTAL PROJECT COSTS (ROUNDED)					\$	111,000

CHIP SEAL						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 3,700	\$	3,700
2	Temporary Traffic Control	1	LS	\$ 2,300	\$	2,300
3	Emulsified Asphalt	10	TN	\$ 1,000	\$	10,032
4	Asphalt for Fog Seal	2	TN	\$ 900	\$	1,465
5	Furnishing and Placing Crushed Screenings	5,600	SY	\$ 4	\$	22,400
Subtotal					\$	39,897
Sales Tax at 8.5%					\$	3,391
Construction Contingencies at 10%					\$	3,990
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	48,000
15% Design Engineering and Construction Management Services					\$	7,200
TOTAL PROJECT COSTS (ROUNDED)					\$	56,000

**Planning Level Cost Estimate
Peaceful Valley Country Club
Pavement Assessment**

Road Width=	20 Feet
Lane Feet=	470 Feet
FDR %=	0.00% Percentage (based on site visit)
FDR Area=	0 Square Feet
Repair %=	5.00% Percentage (Assumption)
Repair Area=	470 Square Feet

STREET SEGMENT: Blue Jay Valley Lane

REPAIR						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 300	\$	300
2	Temporary Traffic Control	1	LS	\$ 500	\$	500
3	Pulverization for Full Depth Reclamation (FDR)	0	SY	\$ 12	\$	-
4	Pavement Repair Excavation, Incl. Haul	60	SY	\$ 20	\$	1,200
5	Hot Mix Asphalt for Pavement Repair	10	TN	\$ 120	\$	1,200
Subtotal					\$	3,200
Sales Tax at 8.5%					\$	272
Construction Contingencies at 10%					\$	320
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	4,000
15% Design Engineering and Construction Management Services					\$	600
TOTAL PROJECT COSTS (ROUNDED)					\$	5,000

OVERLAY						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 1,700	\$	1,700
2	Temporary Traffic Control	1	LS	\$ 500	\$	500
3	Hot Mix Asphalt	120	TN	\$ 100	\$	12,000
4	Crushed Surfacing Top Course (Shoulder Repair)	30	TN	\$ 30	\$	900
5	Adjust Monument to Grade	2	EA	\$ 500	\$	1,000
6	Adjust Manhole to Grade	5	EA	\$ 500	\$	2,500
Subtotal					\$	18,600
Sales Tax at 8.5%					\$	1,581
Construction Contingencies at 10%					\$	1,860
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	23,000
15% Design Engineering and Construction Management Services					\$	3,450
TOTAL PROJECT COSTS (ROUNDED)					\$	27,000

CHIP SEAL						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 800	\$	800
2	Temporary Traffic Control	1	LS	\$ 500	\$	500
3	Emulsified Asphalt	2	TN	\$ 1,000	\$	1,880
4	Asphalt for Fog Seal	0	TN	\$ 900	\$	274
5	Furnishing and Placing Crushed Screenings	1,100	SY	\$ 4	\$	4,400
Subtotal					\$	7,854
Sales Tax at 8.5%					\$	668
Construction Contingencies at 10%					\$	785
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	10,000
15% Design Engineering and Construction Management Services					\$	1,500
TOTAL PROJECT COSTS (ROUNDED)					\$	12,000

**Planning Level Cost Estimate
Peaceful Valley Country Club
Pavement Assessment**

Road Width=	20 Feet
Lane Feet=	930 Feet
FDR %=	0.00% Percentage (based on site visit)
FDR Area=	0 Square Feet
Repair %=	5.00% Percentage (Assumption)
Repair Area=	930 Square Feet

STREET SEGMENT: Blackbird Valley Lane and Place

REPAIR						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 600	\$	600
2	Temporary Traffic Control	1	LS	\$ 1,000	\$	1,000
3	Pulverization for Full Depth Reclamation (FDR)	0	SY	\$ 12	\$	-
4	Pavement Repair Excavation, Incl. Haul	110	SY	\$ 20	\$	2,200
5	Hot Mix Asphalt for Pavement Repair	20	TN	\$ 120	\$	2,400
Subtotal					\$	6,200
Sales Tax at 8.5%					\$	527
Construction Contingencies at 10%					\$	620
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	8,000
15% Design Engineering and Construction Management Services					\$	1,200
TOTAL PROJECT COSTS (ROUNDED)					\$	10,000

OVERLAY						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 3,000	\$	3,000
2	Temporary Traffic Control	1	LS	\$ 1,000	\$	1,000
3	Hot Mix Asphalt	240	TN	\$ 100	\$	24,000
4	Crushed Surfacing Top Course (Shoulder Repair)	50	TN	\$ 30	\$	1,500
5	Adjust Monument to Grade	2	EA	\$ 500	\$	1,000
6	Adjust Manhole to Grade	5	EA	\$ 500	\$	2,500
Subtotal					\$	33,000
Sales Tax at 8.5%					\$	2,805
Construction Contingencies at 10%					\$	3,300
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	40,000
15% Design Engineering and Construction Management Services					\$	6,000
TOTAL PROJECT COSTS (ROUNDED)					\$	46,000

CHIP SEAL						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 1,400	\$	1,400
2	Temporary Traffic Control	1	LS	\$ 1,000	\$	1,000
3	Emulsified Asphalt	4	TN	\$ 1,000	\$	3,720
4	Asphalt for Fog Seal	1	TN	\$ 900	\$	543
5	Furnishing and Placing Crushed Screenings	2,100	SY	\$ 4	\$	8,400
Subtotal					\$	15,063
Sales Tax at 8.5%					\$	1,280
Construction Contingencies at 10%					\$	1,506
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	18,000
15% Design Engineering and Construction Management Services					\$	2,700
TOTAL PROJECT COSTS (ROUNDED)					\$	21,000

**Planning Level Cost Estimate
Peaceful Valley Country Club
Pavement Assessment**

Road Width=	20 Feet
Lane Feet=	700 Feet
FDR %=	0.00% Percentage (based on site visit)
FDR Area=	0 Square Feet
Repair %=	8.00% Percentage (Assumption)
Repair Area=	1120 Square Feet

STREET SEGMENT: Fall Valley Lane

REPAIR						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 600	\$	600
2	Temporary Traffic Control	1	LS	\$ 700	\$	700
3	Pulverization for Full Depth Reclamation (FDR)	0	SY	\$ 12	\$	-
4	Pavement Repair Excavation, Incl. Haul	130	SY	\$ 20	\$	2,600
5	Hot Mix Asphalt for Pavement Repair	20	TN	\$ 120	\$	2,400
Subtotal					\$	6,300
Sales Tax at 8.5%					\$	536
Construction Contingencies at 10%					\$	630
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	8,000
15% Design Engineering and Construction Management Services					\$	1,200
TOTAL PROJECT COSTS (ROUNDED)					\$	10,000

OVERLAY						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 2,400	\$	2,400
2	Temporary Traffic Control	1	LS	\$ 700	\$	700
3	Hot Mix Asphalt	180	TN	\$ 100	\$	18,000
4	Crushed Surfacing Top Course (Shoulder Repair)	40	TN	\$ 30	\$	1,200
5	Adjust Monument to Grade	2	EA	\$ 500	\$	1,000
6	Adjust Manhole to Grade	5	EA	\$ 500	\$	2,500
Subtotal					\$	25,800
Sales Tax at 8.5%					\$	2,193
Construction Contingencies at 10%					\$	2,580
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	31,000
15% Design Engineering and Construction Management Services					\$	4,650
TOTAL PROJECT COSTS (ROUNDED)					\$	36,000

CHIP SEAL						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 1,100	\$	1,100
2	Temporary Traffic Control	1	LS	\$ 700	\$	700
3	Emulsified Asphalt	3	TN	\$ 1,000	\$	2,800
4	Asphalt for Fog Seal	0	TN	\$ 900	\$	409
5	Furnishing and Placing Crushed Screenings	1,600	SY	\$ 4	\$	6,400
Subtotal					\$	11,409
Sales Tax at 8.5%					\$	970
Construction Contingencies at 10%					\$	1,141
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	14,000
15% Design Engineering and Construction Management Services					\$	2,100
TOTAL PROJECT COSTS (ROUNDED)					\$	17,000

**Planning Level Cost Estimate
Peaceful Valley Country Club
Pavement Assessment**

Road Width=	20 Feet
Lane Feet=	530 Feet
FDR %=	0.00% Percentage (based on site visit)
FDR Area=	0 Square Feet
Repair %=	5.00% Percentage (Assumption)
Repair Area=	530 Square Feet

STREET SEGMENT: Boulder Valley Lane

REPAIR						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 300	\$	300
2	Temporary Traffic Control	1	LS	\$ 600	\$	600
3	Pulverization for Full Depth Reclamation (FDR)	0	SY	\$ 12	\$	-
4	Pavement Repair Excavation, Incl. Haul	60	SY	\$ 20	\$	1,200
5	Hot Mix Asphalt for Pavement Repair	10	TN	\$ 120	\$	1,200
Subtotal					\$	3,300
Sales Tax at 8.5%					\$	281
Construction Contingencies at 10%					\$	330
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	4,000
15% Design Engineering and Construction Management Services					\$	600
TOTAL PROJECT COSTS (ROUNDED)					\$	5,000

OVERLAY						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 1,900	\$	1,900
2	Temporary Traffic Control	1	LS	\$ 600	\$	600
3	Hot Mix Asphalt	140	TN	\$ 100	\$	14,000
4	Crushed Surfacing Top Course (Shoulder Repair)	30	TN	\$ 30	\$	900
5	Adjust Monument to Grade	2	EA	\$ 500	\$	1,000
6	Adjust Manhole to Grade	5	EA	\$ 500	\$	2,500
Subtotal					\$	20,900
Sales Tax at 8.5%					\$	1,777
Construction Contingencies at 10%					\$	2,090
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	25,000
15% Design Engineering and Construction Management Services					\$	3,750
TOTAL PROJECT COSTS (ROUNDED)					\$	29,000

CHIP SEAL						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 800	\$	800
2	Temporary Traffic Control	1	LS	\$ 600	\$	600
3	Emulsified Asphalt	2	TN	\$ 1,000	\$	2,120
4	Asphalt for Fog Seal	0	TN	\$ 900	\$	310
5	Furnishing and Placing Crushed Screenings	1,200	SY	\$ 4	\$	4,800
Subtotal					\$	8,630
Sales Tax at 8.5%					\$	734
Construction Contingencies at 10%					\$	863
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	11,000
15% Design Engineering and Construction Management Services					\$	1,650
TOTAL PROJECT COSTS (ROUNDED)					\$	13,000

**Planning Level Cost Estimate
Peaceful Valley Country Club
Pavement Assessment**

Road Width=	20 Feet
Lane Feet=	550 Feet
FDR %=	0.00% Percentage (based on site visit)
FDR Area=	0 Square Feet
Repair %=	8.00% Percentage (Assumption)
Repair Area=	880 Square Feet

STREET SEGMENT: Frontier Valley Lane

REPAIR						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 500	\$	500
2	Temporary Traffic Control	1	LS	\$ 600	\$	600
3	Pulverization for Full Depth Reclamation (FDR)	0	SY	\$ 12	\$	-
4	Pavement Repair Excavation, Incl. Haul	100	SY	\$ 20	\$	2,000
5	Hot Mix Asphalt for Pavement Repair	20	TN	\$ 120	\$	2,400
Subtotal					\$	5,500
Sales Tax at 8.5%					\$	468
Construction Contingencies at 10%					\$	550
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	7,000
15% Design Engineering and Construction Management Services					\$	1,050
TOTAL PROJECT COSTS (ROUNDED)					\$	9,000

OVERLAY						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 1,900	\$	1,900
2	Temporary Traffic Control	1	LS	\$ 600	\$	600
3	Hot Mix Asphalt	140	TN	\$ 100	\$	14,000
4	Crushed Surfacing Top Course (Shoulder Repair)	30	TN	\$ 30	\$	900
5	Adjust Monument to Grade	2	EA	\$ 500	\$	1,000
6	Adjust Manhole to Grade	5	EA	\$ 500	\$	2,500
Subtotal					\$	20,900
Sales Tax at 8.5%					\$	1,777
Construction Contingencies at 10%					\$	2,090
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	25,000
15% Design Engineering and Construction Management Services					\$	3,750
TOTAL PROJECT COSTS (ROUNDED)					\$	29,000

CHIP SEAL						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 900	\$	900
2	Temporary Traffic Control	1	LS	\$ 600	\$	600
3	Emulsified Asphalt	2	TN	\$ 1,000	\$	2,200
4	Asphalt for Fog Seal	0	TN	\$ 900	\$	321
5	Furnishing and Placing Crushed Screenings	1,300	SY	\$ 4	\$	5,200
Subtotal					\$	9,221
Sales Tax at 8.5%					\$	784
Construction Contingencies at 10%					\$	922
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	11,000
15% Design Engineering and Construction Management Services					\$	1,650
TOTAL PROJECT COSTS (ROUNDED)					\$	13,000

**Planning Level Cost Estimate
Peaceful Valley Country Club
Pavement Assessment**

Road Width=	20 Feet
Lane Feet=	400 Feet
FDR %=	0.00% Percentage (based on site visit)
FDR Area=	0 Square Feet
Repair %=	5.00% Percentage (Assumption)
Repair Area=	400 Square Feet

STREET SEGMENT: Red Valley Lane and Court

REPAIR						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 300	\$	300
2	Temporary Traffic Control	1	LS	\$ 400	\$	400
3	Pulverization for Full Depth Reclamation (FDR)	0	SY	\$ 12	\$	-
4	Pavement Repair Excavation, Incl. Haul	50	SY	\$ 20	\$	1,000
5	Hot Mix Asphalt for Pavement Repair	10	TN	\$ 120	\$	1,200
Subtotal					\$	2,900
Sales Tax at 8.5%					\$	247
Construction Contingencies at 10%					\$	290
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	4,000
15% Design Engineering and Construction Management Services					\$	600
TOTAL PROJECT COSTS (ROUNDED)					\$	5,000

OVERLAY						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 1,600	\$	1,600
2	Temporary Traffic Control	1	LS	\$ 400	\$	400
3	Hot Mix Asphalt	110	TN	\$ 100	\$	11,000
4	Crushed Surfacing Top Course (Shoulder Repair)	20	TN	\$ 30	\$	600
5	Adjust Monument to Grade	2	EA	\$ 500	\$	1,000
6	Adjust Manhole to Grade	5	EA	\$ 500	\$	2,500
Subtotal					\$	17,100
Sales Tax at 8.5%					\$	1,454
Construction Contingencies at 10%					\$	1,710
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	21,000
15% Design Engineering and Construction Management Services					\$	3,150
TOTAL PROJECT COSTS (ROUNDED)					\$	25,000

CHIP SEAL						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 600	\$	600
2	Temporary Traffic Control	1	LS	\$ 400	\$	400
3	Emulsified Asphalt	2	TN	\$ 1,000	\$	1,600
4	Asphalt for Fog Seal	0	TN	\$ 900	\$	234
5	Furnishing and Placing Crushed Screenings	900	SY	\$ 4	\$	3,600
Subtotal					\$	6,434
Sales Tax at 8.5%					\$	547
Construction Contingencies at 10%					\$	643
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	8,000
15% Design Engineering and Construction Management Services					\$	1,200
TOTAL PROJECT COSTS (ROUNDED)					\$	10,000

**Planning Level Cost Estimate
Peaceful Valley Country Club
Pavement Assessment**

Road Width=	20 Feet
Lane Feet=	480 Feet
FDR %=	0.00% Percentage (based on site visit)
FDR Area=	0 Square Feet
Repair %=	8.00% Percentage (Assumption)
Repair Area=	770 Square Feet

STREET SEGMENT: Hopeful Valley Lane

REPAIR						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 500	\$ 500	
2	Temporary Traffic Control	1	LS	\$ 500	\$ 500	\$1/lane foot
3	Pulverization for Full Depth Reclamation (FDR)	0	SY	\$ 12	\$ -	Full Depth Reclamation (FDR)
4	Pavement Repair Excavation, Incl. Haul	90	SY	\$ 20	\$ 1,800	2-inch removal depth
5	Hot Mix Asphalt for Pavement Repair	20	TN	\$ 120	\$ 2,400	2-inch for pavement repair
Subtotal					\$ 5,200	
Sales Tax at 8.5%					\$ 442	
Construction Contingencies at 10%					\$ 520	
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$ 7,000	
15% Design Engineering and Construction Management Services					\$ 1,050	
TOTAL PROJECT COSTS (ROUNDED)					\$ 9,000	

OVERLAY						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 1,800	\$ 1,800	
2	Temporary Traffic Control	1	LS	\$ 500	\$ 500	\$1/lane foot
3	Hot Mix Asphalt	130	TN	\$ 100	\$ 13,000	2-inch overlay depth
4	Crushed Surfacing Top Course (Shoulder Repair)	30	TN	\$ 30	\$ 900	2-foot wide on both sides
5	Adjust Monument to Grade	2	EA	\$ 500	\$ 1,000	Estimate
6	Adjust Manhole to Grade	5	EA	\$ 500	\$ 2,500	Estimate
Subtotal					\$ 19,700	
Sales Tax at 8.5%					\$ 1,675	
Construction Contingencies at 10%					\$ 1,970	
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$ 24,000	
15% Design Engineering and Construction Management Services					\$ 3,600	
TOTAL PROJECT COSTS (ROUNDED)					\$ 28,000	

CHIP SEAL						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 800	\$ 800	
2	Temporary Traffic Control	1	LS	\$ 500	\$ 500	\$1/lane foot
3	Emulsified Asphalt	2	TN	\$ 1,000	\$ 1,920	0.0018 TN/SY (WSDOT Design Manual)
4	Asphalt for Fog Seal	0	TN	\$ 900	\$ 280	0.000292 TN/SY (WSDOT Design Manual)
5	Furnishing and Placing Crushed Screenings	1,100	SY	\$ 4	\$ 4,400	Estimate
Subtotal					\$ 7,900	
Sales Tax at 8.5%					\$ 672	
Construction Contingencies at 10%					\$ 790	
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$ 10,000	
15% Design Engineering and Construction Management Services					\$ 1,500	
TOTAL PROJECT COSTS (ROUNDED)					\$ 12,000	

**Planning Level Cost Estimate
Peaceful Valley Country Club
Pavement Assessment**

Road Width=	20 Feet
Lane Feet=	175 Feet
FDR %=	0.00% Percentage (based on site visit)
FDR Area=	0 Square Feet
Repair %=	8.00% Percentage (Assumption)
Repair Area=	280 Square Feet

STREET SEGMENT: Ruby Valley Court

REPAIR						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 300	\$	300
2	Temporary Traffic Control	1	LS	\$ 200	\$	200
3	Pulverization for Full Depth Reclamation (FDR)	0	SY	\$ 12	\$	-
4	Pavement Repair Excavation, Incl. Haul	40	SY	\$ 20	\$	800
5	Hot Mix Asphalt for Pavement Repair	10	TN	\$ 120	\$	1,200
Subtotal					\$	2,500
Sales Tax at 8.5%					\$	213
Construction Contingencies at 10%					\$	250
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	3,000
15% Design Engineering and Construction Management Services					\$	450
TOTAL PROJECT COSTS (ROUNDED)					\$	4,000

OVERLAY						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 900	\$	900
2	Temporary Traffic Control	1	LS	\$ 200	\$	200
3	Hot Mix Asphalt	50	TN	\$ 100	\$	5,000
4	Crushed Surfacing Top Course (Shoulder Repair)	10	TN	\$ 30	\$	300
5	Adjust Monument to Grade	2	EA	\$ 500	\$	1,000
6	Adjust Manhole to Grade	5	EA	\$ 500	\$	2,500
Subtotal					\$	9,900
Sales Tax at 8.5%					\$	842
Construction Contingencies at 10%					\$	990
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	12,000
15% Design Engineering and Construction Management Services					\$	1,800
TOTAL PROJECT COSTS (ROUNDED)					\$	14,000

CHIP SEAL						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 300	\$	300
2	Temporary Traffic Control	1	LS	\$ 200	\$	200
3	Emulsified Asphalt	1	TN	\$ 1,000	\$	700
4	Asphalt for Fog Seal	0	TN	\$ 900	\$	102
5	Furnishing and Placing Crushed Screenings	400	SY	\$ 4	\$	1,600
Subtotal					\$	2,902
Sales Tax at 8.5%					\$	247
Construction Contingencies at 10%					\$	290
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	4,000
15% Design Engineering and Construction Management Services					\$	600
TOTAL PROJECT COSTS (ROUNDED)					\$	5,000

**Planning Level Cost Estimate
Peaceful Valley Country Club
Pavement Assessment**

Road Width=	20 Feet
Lane Feet=	170 Feet
FDR %=	0.00% Percentage (based on site visit)
FDR Area=	0 Square Feet
Repair %=	15.00% Percentage (Assumption)
Repair Area=	510 Square Feet

STREET SEGMENT: Happy Valley Court

REPAIR						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 300	\$	300
2	Temporary Traffic Control	1	LS	\$ 200	\$	200
3	Pulverization for Full Depth Reclamation (FDR)	0	SY	\$ 12	\$	-
4	Pavement Repair Excavation, Incl. Haul	60	SY	\$ 20	\$	1,200
5	Hot Mix Asphalt for Pavement Repair	10	TN	\$ 120	\$	1,200
Subtotal					\$	2,900
Sales Tax at 8.5%					\$	247
Construction Contingencies at 10%					\$	290
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	4,000
15% Design Engineering and Construction Management Services					\$	600
TOTAL PROJECT COSTS (ROUNDED)					\$	5,000

OVERLAY						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 900	\$	900
2	Temporary Traffic Control	1	LS	\$ 200	\$	200
3	Hot Mix Asphalt	50	TN	\$ 100	\$	5,000
4	Crushed Surfacing Top Course (Shoulder Repair)	10	TN	\$ 30	\$	300
5	Adjust Monument to Grade	2	EA	\$ 500	\$	1,000
6	Adjust Manhole to Grade	5	EA	\$ 500	\$	2,500
Subtotal					\$	9,900
Sales Tax at 8.5%					\$	842
Construction Contingencies at 10%					\$	990
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	12,000
15% Design Engineering and Construction Management Services					\$	1,800
TOTAL PROJECT COSTS (ROUNDED)					\$	14,000

CHIP SEAL						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 300	\$	300
2	Temporary Traffic Control	1	LS	\$ 200	\$	200
3	Emulsified Asphalt	1	TN	\$ 1,000	\$	680
4	Asphalt for Fog Seal	0	TN	\$ 900	\$	99
5	Furnishing and Placing Crushed Screenings	400	SY	\$ 4	\$	1,600
Subtotal					\$	2,879
Sales Tax at 8.5%					\$	245
Construction Contingencies at 10%					\$	288
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	4,000
15% Design Engineering and Construction Management Services					\$	600
TOTAL PROJECT COSTS (ROUNDED)					\$	5,000

**Planning Level Cost Estimate
Peaceful Valley Country Club
Pavement Assessment**

Road Width=	20 Feet
Lane Feet=	200 Feet
FDR %=	0.00% Percentage (based on site visit)
FDR Area=	0 Square Feet
Repair %=	5.00% Percentage (Assumption)
Repair Area=	200 Square Feet

STREET SEGMENT: Spur Valley Court

REPAIR						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 200	\$	200
2	Temporary Traffic Control	1	LS	\$ 200	\$	200
3	Pulverization for Full Depth Reclamation (FDR)	0	SY	\$ 12	\$	-
4	Pavement Repair Excavation, Incl. Haul	30	SY	\$ 20	\$	600
5	Hot Mix Asphalt for Pavement Repair	10	TN	\$ 120	\$	1,200
Subtotal					\$	2,200
Sales Tax at 8.5%					\$	187
Construction Contingencies at 10%					\$	220
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	3,000
15% Design Engineering and Construction Management Services					\$	450
TOTAL PROJECT COSTS (ROUNDED)					\$	4,000

OVERLAY						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 1,000	\$	1,000
2	Temporary Traffic Control	1	LS	\$ 200	\$	200
3	Hot Mix Asphalt	60	TN	\$ 100	\$	6,000
4	Crushed Surfacing Top Course (Shoulder Repair)	10	TN	\$ 30	\$	300
5	Adjust Monument to Grade	2	EA	\$ 500	\$	1,000
6	Adjust Manhole to Grade	5	EA	\$ 500	\$	2,500
Subtotal					\$	11,000
Sales Tax at 8.5%					\$	935
Construction Contingencies at 10%					\$	1,100
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	14,000
15% Design Engineering and Construction Management Services					\$	2,100
TOTAL PROJECT COSTS (ROUNDED)					\$	17,000

CHIP SEAL						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 400	\$	400
2	Temporary Traffic Control	1	LS	\$ 200	\$	200
3	Emulsified Asphalt	1	TN	\$ 1,000	\$	800
4	Asphalt for Fog Seal	0	TN	\$ 900	\$	117
5	Furnishing and Placing Crushed Screenings	500	SY	\$ 4	\$	2,000
Subtotal					\$	3,517
Sales Tax at 8.5%					\$	299
Construction Contingencies at 10%					\$	352
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	5,000
15% Design Engineering and Construction Management Services					\$	750
TOTAL PROJECT COSTS (ROUNDED)					\$	6,000

**Planning Level Cost Estimate
Peaceful Valley Country Club
Pavement Assessment**

Road Width=	20 Feet
Lane Feet=	140 Feet
FDR %=	0.00% Percentage (based on site visit)
FDR Area=	0 Square Feet
Repair %=	8.00% Percentage (Assumption)
Repair Area=	230 Square Feet

STREET SEGMENT: Flair Valley Court

REPAIR						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 200	\$	200
2	Temporary Traffic Control	1	LS	\$ 200	\$	200
3	Pulverization for Full Depth Reclamation (FDR)	0	SY	\$ 12	\$	-
4	Pavement Repair Excavation, Incl. Haul	30	SY	\$ 20	\$	600
5	Hot Mix Asphalt for Pavement Repair	10	TN	\$ 120	\$	1,200
Subtotal					\$	2,200
Sales Tax at 8.5%					\$	187
Construction Contingencies at 10%					\$	220
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	3,000
15% Design Engineering and Construction Management Services					\$	450
TOTAL PROJECT COSTS (ROUNDED)					\$	4,000

OVERLAY						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 800	\$	800
2	Temporary Traffic Control	1	LS	\$ 200	\$	200
3	Hot Mix Asphalt	40	TN	\$ 100	\$	4,000
4	Crushed Surfacing Top Course (Shoulder Repair)	10	TN	\$ 30	\$	300
5	Adjust Monument to Grade	2	EA	\$ 500	\$	1,000
6	Adjust Manhole to Grade	5	EA	\$ 500	\$	2,500
Subtotal					\$	8,800
Sales Tax at 8.5%					\$	748
Construction Contingencies at 10%					\$	880
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	11,000
15% Design Engineering and Construction Management Services					\$	1,650
TOTAL PROJECT COSTS (ROUNDED)					\$	13,000

CHIP SEAL						
Item	Description	Quantity	Units	Unit Cost	Cost	
1	Mobilization, Cleanup and Demobilization	1	LS	\$ 300	\$	300
2	Temporary Traffic Control	1	LS	\$ 200	\$	200
3	Emulsified Asphalt	1	TN	\$ 1,000	\$	560
4	Asphalt for Fog Seal	0	TN	\$ 900	\$	82
5	Furnishing and Placing Crushed Screenings	400	SY	\$ 4	\$	1,600
Subtotal					\$	2,742
Sales Tax at 8.5%					\$	233
Construction Contingencies at 10%					\$	274
TOTAL CONSTRUCTION COSTS (ROUNDED)					\$	4,000
15% Design Engineering and Construction Management Services					\$	600
TOTAL PROJECT COSTS (ROUNDED)					\$	5,000